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ABSTRACTS

Policy Research Working Paper Series

Numbers 3540–3650

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The World Bank
Research Support Team
Development Economics
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1. **Prepare a 250 word abstract.** The abstract should set out the main questions addressed in the paper and the key findings, putting them (if appropriate) in the context of the relevant literature. For empirical papers, briefly describe the data, including such details as the period covered, the countries or country groups included, the size of the sample, and the type of survey, as appropriate. ***The abstract will be published as submitted.*** To ensure maximum impact for your work, consult existing working paper abstracts and test your abstract by asking a colleague who is not familiar with the paper to read it before submission.

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Policy Research Working Paper Series

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3540. Trade Remedies and World Trade Organization Dispute Settlement: Why are So Few Challenged?

Chad P. Bown
(March 2005)

Antidumping and related trade remedies are the most popular policy instruments that many of the largest importing countries in the World Trade Organization (WTO) system use to restrict international trade. While such trade remedies are also frequent targets of dispute settlement activity under the WTO, given that Panel and Appellate Body rulings have almost invariably found that some aspect of each reviewed remedy was inconsistent with WTO obligations, an open research question is why aren't *more* remedies targeted by dispute settlement? Bown provides a first empirical investigation of the trade remedy and WTO dispute settlement interaction by focusing on determinants of WTO members' decisions of whether to formally challenge U.S. trade remedies imposed between 1992 and 2003. He provides evidence that it is not only the size of the economic market at stake and the capacity to retaliate under potential DSU (dispute settlement understanding)-authorized sanctions that influence the litigation decision of whether to formally challenge a measure at the WTO. The author also finds that if the negatively affected foreign industry has the capacity to directly retaliate through a reciprocal antidumping investigation and measure of its own, its government is *less* likely to pursue the case on its behalf at the WTO. This is consistent with the theory that potential complainants may be avoiding WTO litigation in favor of pursuing reciprocal antidumping and hence "vigilante justice."

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of the rules of the international trading system on trade policy choices and economic incentives. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at cbown@brandeis.edu. (34 pages)

3541. The Impact of Trade Liberalization on Household Welfare in Vietnam

Ganesh Seshan
(March 2005)

What is the effect of trade liberalization on households in developing countries? To what extent do the poor benefit when local markets are made more accommodative to international trade? Seshan empirically analyzes the distributional impact of trade policies on households in a low-income country with a large rural economy where labor markets are imperfect. The methodology in this paper, which can be applied to various types of labor market conditions, relates changes in prices attributed to trade reforms to changes in household welfare, income distribution, and poverty using theoretically consistent measures of producer and consumer welfare. The author investigates the effects on poverty and income distribution of national and international market integration in Vietnam's rice sector and fertilizer market between 1993 and 1998, a period of ongoing market reforms when the national poverty rate fell sharply from 59 percent to 37 percent. He finds that when the effects of opening the rice and fertilizer market are isolated, Vietnam's agricultural trade reforms did not contribute to a significant improvement in overall household welfare or decline in poverty over this period. Nonetheless, the liberalization exercise can explain about half of the reduction in poverty incidence among farm households. The results also show that liberalization did not exacerbate income inequality, but did generate gains for rural households across the distribution, particularly the poor, at the expense of urban households.

This paper—a product of the Social and Economic Development Group, Middle East and North Africa Region—is part of a larger effort in the Bank to study the linkages between trade and poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ganesh Seshan, room H10-142, telephone 202-473-3188, email address gseshan@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. (50 pages)

3542. Do Donors Get What They Paid For? Micro Evidence on the Fungibility of Development Project Aid

Dominique van de Walle and
Dorothyjean Cratty
(March 2005)

Recipient government responses to development project aid have typically been studied at high levels of aggregation, using cross-country comparisons and/or aggregate time series data. Yet increasingly the relevant decisions are being made at the local level, in response to specific community-level projects. Van de Walle and Cratty use local-level data to test for fungibility of World Bank financing of rural road rehabilitation targeted to specific geographic areas of Vietnam. A simple double difference estimate suggests that the project's net contribution to rehabilitated road increments is close to zero, suggesting complete displacement of funding. However, with better controls for the endogeneity of project placement the authors find much less evidence of fungibility, with displacement accounting for around one-third of the aid. The results point to the importance of dealing with selection bias in assessing project aid fungibility.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to evaluate the impact of rural roads on living standards. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-607, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Dominique van de Walle may be contacted at dvandewalle@worldbank.org. (41 pages)

3543. Survey Nonresponse and the Distribution of Income

Anton Korinek, Johan A. Mistiaen,
and Martin Ravallion
(March 2005)

Korinek, Mistiaen, and Ravallion examine the distributional implications of selective compliance in sample surveys, whereby households with different incomes are not equally likely to participate. They discuss poverty and inequality measurement implications for monotonically decreasing and inverted-U compliance-income relationships. The authors demonstrate that the latent income effect on the probability of compliance can be estimated from information on response rates across geographic areas. On implementing the method on the Current Population Survey for the United States, they find that the compliance probability falls monotonically as income rises. Correcting for nonresponse appreciably increases mean income and inequality, but has only a small impact on poverty incidence up to poverty lines common in the United States.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to investigate methods of making survey data more reliable for monitoring poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1151, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Martin Ravallion may be contacted at mravallion@worldbank.org. (36 pages)

3544. Learning-by-Doing, Learning-by-Exporting, and Productivity: Evidence from Colombia

Ana M. Fernandes and Alberto E. Isgut
(March 2005)

The empirical evidence on whether participation in export markets increases plant-level productivity has been inconclusive so far. Fernandes and Isgut explain this inconclusiveness by drawing on Arrow's (1962) characterization of learning-by-doing, which suggests focusing on young plants and using measures of export experience rather than export participation. They find strong evidence of learning-by-exporting for young Colombian manufacturing plants between 1981 and 1991: total factor productivity increases 4–5 percent for each additional year a plant has exported, after controlling for the effect of current exports on total factor productivity. Learning-by-exporting is more important for young than for old plants and in industries that deliver a larger percentage of their exports to high-income countries.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand the links between trade and productivity. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Ana Fernandes may be contacted at afernandes@worldbank.org. (58 pages)

3545. Sustaining Urban Growth through Innovative Capacity: Beijing and Shanghai in Comparison

Wang Jici and Tong Xin
(March 2005)

The authors examine the diverse prospects of innovative sectors in Beijing and Shanghai using available indicators and data collected for this study through surveys. Beijing is the first choice for companies locating in China, but foreign employees prefer Shanghai for living convenience and cultural amenities. While Shanghai lags behind Beijing in knowledge creation and the generation of startup companies in the innovative sectors, it takes the lead in the commercialization of technological innovations and the development of creative cultural industries. The municipal authorities of Beijing and Shanghai have improved the innovation environment of the cities, but certain elements still stunt the growth of innovative industries, which cannot be removed easily. Three kinds of knowledge-intensive enterprises included in innovative sectors in the survey are high-tech manufacturers, knowledge-intensive business services, and creative content providers. The survey found that the clustering of the firms arose from the attraction of preferential policies and the purchase by governments or state-owned enterprises of information technology products. The survey shows that interaction among firms is inadequate in the knowledge-based industrial clusters in both Beijing and Shanghai. Hence, it may be some time before clustering leads to substantial gains in collective efficiency for innovative industry in Beijing and Shanghai.

This paper—a product of the Development Research Group—is part of a larger effort in the group to analyze the growth prospects of East Asian economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kaoru Nabeshima, room MC2-517, telephone 202-473-7880, fax 202-522-1150, email address knabeshima@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at wjc@pku.edu.cn or lth@pku.edu.cn. (52 pages)

3546. Incentives to Learn

Michael Kremer, Edward Miguel, Rebecca Thornton, and Owen Ozier
(March 2005)

Kremer, Miguel, Thornton, and Ozier report results from a randomized evaluation of a merit scholarship program for adolescent girls in Kenya. Girls who scored well on academic exams received a cash grant and had school fees paid. Girls eligible for the scholarship showed significant gains in academic examination scores (average gain 0.15 standard deviations). There was considerable sample attrition and no significant program impact in the smaller of the two program districts, but in the other district girls showed large gains (average gain 0.22–0.27 standard deviations), and these gains persisted one full year following the competition. There is also evidence of positive program externalities on learning—boys (who were ineligible for the awards) also showed sizable average test gains. Both student and teacher school attendance increased in the program schools.

This paper—a product of Poverty Reduction and Economic Management 2, Africa Technical Families—is part of a larger effort in the region to promote evidence-based policy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kathie Krumm, room J10-137, telephone 202-458-4677, fax 202-473-8262, email address kkrumm@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mkremer@fas.harvard.edu, emiguel@econ.berkeley.edu, or rlthornt@fas.harvard.edu. (43 pages)

3547. Who Bears the Cost of Russia's Military Draft?

Michael Lokshin and Ruslan Yemtsov
(March 2005)

Lokshin and Yemtsov use data from a large nationally representative survey in Russia to analyze the distributional and welfare implications of draft avoidance as a common response to Russia's highly unpopular conscription system. They develop a simple theoretical model that describes household compliance decisions with respect to enlistment. The authors use several econometric techniques to estimate the effect of various household characteristics on the probability of serving in the army and the implications for household income. Their results indicate that the burden of conscription falls disproportionately on the poor. Poor, rural households, with a low level of education, are more likely to have sons who are enlisted than urban, wealthy, and better-educated families. The losses incurred by the poor are disproportionately large and exceed the statutory rates of personal income taxes.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to study distributional and welfare implications of government policies and regulations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mlokshin@worldbank.org or ryemtsov@worldbank.org. (32 pages)

3548. Wage Determination in Northeast Brazil

Dorte Verner
(March 2005)

Verner analyzes the labor markets in the Northeast region of Brazil that includes Pernambuco, Bahia, and Ceará states. Her findings show a rather heterogeneous impact pattern of individual characteristics on monthly wages across the wage distribution. That is, the magnitude of the effect of a wage determinant is different depending on whether the worker is placed in the lower, median, or top of the wage distribution. The findings reveal that basic schooling matters for all four geographical areas and across the income distribution. However, poor workers are awarded lower returns than their richer peers, and in Bahia and Ceará, the poor do not obtain any returns to basic schooling. Furthermore, the impact of 5–8 or 9–11 years of education is larger than that of 1–4 years of completed education. The returns obtained by a median worker are higher in Ceará and Pernambuco than in Bahia. Finally, completed *tertiary education* offers the largest returns of all levels of education. The median worker receives a premium of 105, 249, and 216 percent in Ceará, Pernambuco, and Bahia, respectively. Hence, one direct policy implication is to increase the quality of education, in particular in poorer neighborhoods.

Experience impacts positively on wages and it increases with age until workers reach 50 years of age. However, returns to experience are falling significantly across the wage distribution. For the poor and younger generations, experience contributes more to wages than education. The occupation of workers is important for wage determination. All workers in the included occupational groups are paid more than workers engaged in agricultural activities. Workers employed as technicians or administrators obtain the highest returns. The white/nonwhite wage disparity reveals that white workers are paid 17 percent more than their nonwhite co-workers, taking into account other characteristics. Gender disparities are large in the Northeast and heterogeneous across the wage distribution. The time spent in the current state impacts adversely on wages. That is, those that have stayed earn, on average, less than the newcomers. There are no considerable differences between male and female workers. Union membership has a positive impact on workers' wages.

This paper—a product of the Social Development Family, Latin America and the Caribbean Region—is part of a larger effort in the region to reduce poverty and increase social inclusion. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grissel Prieto, room I6-226, telephone 202-473-6346, email address gprieto@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dverner@worldbank.org. (86 pages)

3549. Electricity Sector Reform in Developing Countries: A Survey of Empirical Evidence on Determinants and Performance

Tooraj Jamasb, Raffaella Mota, David Newbery, and Michael Pollitt
(March 2005)

Driven by ideology, economic reasoning, and early success stories, vast amounts of financial resources and effort have been spent on reforming infrastructure industries in developing countries. It is therefore important to examine whether evidence supports the logic of reforms. The authors review the empirical evidence on electricity reform in developing countries. They find that country institutions and sector governance play an important role in the success and failure of reform. And reforms also appear to have increased operating efficiency and expanded access to urban customers. However, the reforms have to a lesser degree passed on efficiency gains to customers, tackled distributional effects, and improved rural access. Moreover, some of the literature is not methodologically robust and on par with general development economics literature. Further, findings on some issues are limited and inconclusive, while other important areas are yet to be addressed. Until we know more, implementation of reforms will be more based on ideology and economic theory rather than solid economic evidence.

This paper—a product of the Growth and Investment Team, Development Research Group—was prepared as part of the research program on Industrial Organization Policy for Development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Tooraj Jamasb may be contacted at tooraj.jamasb@econ.cam.ac.uk. (76 pages)

3550. Feedback Links between Economywide and Farm-Level Policies: With Application to Irrigation Water Management in Morocco

Terry Roe, Ariel Dinar, Yacov Tsur, and Xinshen Diao
(March 2005)

The authors focus on policy interventions for improving irrigation water allocation decisions by including both macro and micro considerations in a unified analytical computable general equilibrium (CGE) framework. The approach is demonstrated, using the case of Morocco, by analyzing selected policy (top-down and bottom-up) interventions and external shocks that affect the water sector. Both direct and indirect effects of these interventions are identified. The top-down (macro-to-micro) links are of a trade reform type. The bottom-up (micro-to-macro) links pertain to changes in farm water assignments and the possibility of water trading. The authors find that water productivity is strongly influenced by these policies, with the general equilibrium (indirect) effects modifying and sometimes reversing the partial equilibrium (direct) effects. They also find that the impacts of the two reforms assessed are different, with trade reform having an absolute impact of a higher magnitude than the water reform. Finally, the authors show that the sequence of introducing the policy reforms has different consequences.

This paper—a joint product of the Rural Development Team, Development Research Group, and the Agriculture and Rural Development Department—is the result of the first phase of the research project "Macro-Micro Linkages of Irrigated Water Management" funded by the Bank's Research Support Budget. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-604, telephone 202-473-3716, fax email address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Ariel Dinar may be contacted at adinar@worldbank.org. (35 pages)

3551. Industry Level Analysis: The Way to Identify the Binding Constraints to Economic Growth

Vincent Palmade
(March 2005)

There are many economic diagnostic tools available which are trying to identify the constraints to economic growth in a given country. Unfortunately these tools tend to provide inconclusive and often conflicting answers as to what the most important constraints are. Even more worrisome, they tend to overlook the many industry-specific policy and enforcement issues which, collectively, have been found to be the most important constraints to economic growth. This is the key finding from more than 10 years of economic research by the McKinsey Global Institute (MGI). The MGI Country studies have been uniquely based on the in-depth analysis of a representative sample of industries where clear causality links could be established between factors in the firms' external environment and their behavior, in particular through the analysis of competitive dynamics. They showed in detail how industry-specific policy and enforcement issues were the main constraints to private investment and fair competition—the two drivers of productivity and thus economic growth. This finding implies that governments and international financial institutions should rely on in-depth industry level analysis to uncover product market competition issues and set reform priorities. These analyses should include the often overlooked but critically important domestic service sectors such as retail and housing construction.

This paper—a product of Foreign Investment 1, International Finance Corporation, Investment Climate—is part of a larger effort to improve the investment climate in the developing world. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nathalie David, room F4K-258, telephone 202-473-1429, fax 202-614-2018, email address ndavid1@ifc.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at vpalmade@ifc.org. (31 pages)

3552. Trade Protection and Industry Wage Structure in Poland

Chor-ching Goh and Beata S. Javorcik
(March 2005)

Goh and Javorcik examine the impact of Poland's trade liberalization in 1994–2001 on the industry wage structure. The liberalization was undertaken in preparation for Poland's accession to the European Union and was more pronounced in industries with larger shares of unskilled labor. Their analysis indicates that a decrease in an industry tariff was associated with higher wages being earned by workers employed in the industry, controlling for worker characteristics and geographic variables. The result is robust to including year and industry fixed effects, controlling for industry-level exports, imports, concentration, stock of foreign direct investment, and capital accumulation. The finding is consistent with liberalization increasing competitive pressures, forcing firms to restructure and improve their productivity, which in turn translates into higher profits being shared with workers. It could also be potentially attributed to trade liberalization lowering the costs of imported inputs, which enhances firm profitability. The result holds when skilled workers are excluded from the sample, thus suggesting that reductions in trade barriers benefited the unskilled in terms of an increase in wages.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to improve the understanding of the effects of trade liberalization on poverty and inequality. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at cgoh@worldbank.org or bjavorcik@worldbank.org. (39 pages)

3553. Supervision of Financial Conglomerates: The Case of Chile

Constantinos Stephanou
(March 2005)

Stephanou describes the presence of financial conglomerates and assesses the extent to which the risks they introduce to the Chilean financial system are mitigated by existing oversight arrangements (and at what cost). In particular, he questions whether the current silo-based supervisory framework, which has served the system fairly well until now, can continue unchanged given growing interlinkages in the financial system. The author proposes a high-level short- and medium-term supervisory reform agenda that addresses identified vulnerabilities relating to financial conglomerates and continues the migration from a rules-oriented to a risk-based supervisory approach that has gradually been taking place in Chile in recent years.

This paper is a product of the Finance Cluster Sector Unit, Latin America and the Caribbean Region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Helena Issa, room I5-112, telephone 202-473-0154, fax 202-522-2106, email address hissa@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at cstephanou@worldbank.org. (44 pages)

3554. Promoting Innovation in Developing Countries: A Conceptual Framework

Jean-Eric Aubert
(April 2005)

Aubert provides a conceptual framework for approaching the promotion of technological innovation and its diffusion in developing countries. Innovation climates in developing countries are, by nature, problematic, characterized by poor business and governance conditions, low educational levels, and mediocre infrastructure. This raises particular challenges for the promotion of innovation. The latter should be understood as the diffusion of technologies—and related practices—which are new to a given context (not in absolute terms). What matters first is to provide the necessary package of support—technical, financial, commercial, legal, and so on—with flexible, autonomous agencies adapting their support and operations to the different types of concerned enterprises. Facilitating and responding to the emergence of grass-root needs at the local level is also essential. Support to entrepreneurs and local communities should be primarily provided in matching grant forms to facilitate the mobilization of local resources and ownership. It is of primary importance to pay the greatest attention to country specificities, not only in terms of development level, size, and specialization, but also in terms of administrative and cultural traditions. At the global level, major issues need also to be considered and dealt with by appropriate incentives and regulations: the role of foreign direct investment in developing countries' technological development, conditions of technologies' patenting and licensing, the North-South research asymmetry, and brain drain trends.

This paper—a product of the Knowledge for Development Program, World Bank Institute—is part of a larger effort in the institute to put knowledge and innovation at the core of countries' development strategies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Faythe Calandra, room J2-267, telephone 202-473-6440, fax 202-522-1492, email address fcalandra@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at jaubert@worldbank.org. (37 pages)

3555. How Does the Composition of Public Spending Matter?

Stefano Paternostro, Anand Rajaram, and Erwin R. Tiongson
(April 2005)

Public spending has effects which are complex to trace and difficult to quantify. But the composition of public expenditure has become the key instrument by which development agencies seek to promote economic development. In recent years, the development assistance to heavily indebted poor countries (HIPCs) has been made conditional on increased expenditure on categories that are thought to be "propoor."

This paper responds to the growing concern being expressed about the conceptual foundations and the empirical basis for the belief that poverty can be reduced through targeted public spending. While it is widely accepted that growth and redistribution are important sources of reduction in absolute poverty, a review of the literature confirms the lack of an appropriate theoretical framework for assessing the impact of public spending on growth as well as poverty. There is a need to combine principles of both public economics and growth theory to develop appropriate theoretical guidance for public expenditure policy.

This paper identifies a number of approaches that are beginning to address this gap. Building on these approaches, it proposes a framework that has its foundation in a broadly articulated development strategy and its economic goals such as growth, equity, and poverty reduction. It recommends the use of public economics principles to clarify the roles of the private and public sectors and to recognize the complementarity of spending, taxation, and regulatory instruments available to affect public policy. With regard to the impact of any given type of public spending, policy recommendations must be tailored to countries and be based on empirical analysis that takes account of the lags and leads in their effects on equity and growth and ultimately on poverty. The paper sketches out such a framework as the first step in what will have to be a long-term research agenda to provide theoretically and empirically robust and verifiable guidance to public spending policy.

This paper—a joint product of the Poverty Reduction and Economic Network, Public Sector Governance and Poverty Reduction Groups—is part of a larger effort in the network to improve public expenditure impact. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cecile Wodon, room MC4-552, telephone 202-473-2542, fax 202-522-3283, email address cwodon@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at spaternostro@worldbank.org, arajaram@worldbank.org, or etiongson@worldbank.org. (39 pages)

3556. Credit Risk Measurement under Basel II: An Overview and Implementation Issues for Developing Countries

Constantinos Stephanou
and Juan Carlos Mendoza
(April 2005)

Stephanou and Mendoza provide an overview of the changes in the calculation of minimum regulatory capital requirements for credit risk that have been drafted by the Basel Committee on Banking Supervision (Basel II). Even though the revised credit capital rules represent a dramatic change compared with Basel I, they show that Basel II merely seeks to codify (albeit incompletely) existing best practices in bank risk measurement. But its effective implementation in many developing countries is hindered by fundamental weaknesses in financial infrastructure that will need to be addressed as a priority.

This paper—a product of the Finance Cluster, Latin America and the Caribbean Region—is part of a larger effort in the region to disseminate risk management best practices. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Helena Issa, room I5-112, telephone 202-473-0154, fax 202-522-2106, email address hissa@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at cstephanou@worldbank.org or jmendoza@worldbank.org. (33 pages)

3557. Foreign Aid and Market-Liberalizing Reform

Jac Heckelman and Stephen Knack
(April 2005)

Market-oriented economic policies—reflected in limited economic activity by government, protection of private property rights, a sound monetary policy, outward orientation regarding trade, and efficient tax and regulatory policy—have been strongly linked to faster rates of economic growth. Foreign aid is often provided in the belief that it encourages liberalizing reforms in these areas. This paper analyzes the impact of aid on market-liberalizing policy reform, correcting for the possible endogeneity of aid. Results indicate that higher aid slowed reform over the 1980–2000 period, as measured by a broad index of policies. Disaggregating policy into five areas, aid is significantly linked to slower reform in some policy areas but not in others. Disaggregating by decade, aid's adverse impact on policy reform is much more pronounced for the 1980s than for the 1990s.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to determine ways for making aid more effective in promoting develoment. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at heckeljc@wfu.edu or sknack@worldbank.org. (35 pages)

3558. The Performance of Health Workers in Ethiopia: Results from Qualitative Research

Magnus Lindelow , Pieter Serneels,
and Teigist Lemma
(April 2005)

Insufficient attention has been paid to understanding what determines the performance of health workers and how they make labor market choices. This paper reports on findings from focus group discussions with both health workers and users of health services in Ethiopia, a country with some of the poorest health outcomes in the world. The paper describes performance problems identified by both health users and health workers participating in the focus group discussions, including absenteeism and shirking, pilfering drugs and materials, informal health care provision and illicit charging, and corruption. The second part of the paper presents four structural reasons why these problems arise: (1) the ongoing transition from a health sector dominated by the public sector, toward a more mixed model; (2) the failure of government policies to keep pace with the transition toward a mixed model of service delivery; (3) weak accountability mechanisms and the erosion of professional norms in the health sector; and (4) the impact of HIV/AIDS. The discussions underline the need to base policies on a microanalysis of how health workers make constrained choices, both in their career and in their day to day professional activities.

This paper—a product of the Development Research Group, Public Services Team—is part of a larger effort in the group to understand the constraints to improving the quality and efficiency of health services in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mlindelow@worldbank.org. (21 pages)

3559. Decomposing Changes in Income Inequality into Vertical and Horizontal Redistribution and Reranking, with Applications to China and Vietnam

Adam Wagstaff
(April 2005)

It is acknowledged that the lack of any systematic link between growth and income inequality does not necessarily mean that economic growth is not accompanied by major changes in the underlying income distribution. Wagstaff uses a method devised to decompose the redistributive effect of a tax to analyze the extent to which vertical redistribution associated with changing incomes over time is offset or reinforced by horizontal redistribution and reranking. He uses panel data from China and Vietnam over a period when both countries grew spectacularly as they transitioned from planned to market economies, and yet experienced smaller annual percentage increases in income inequality. The results suggest that substantial amounts of horizontal redistribution and reranking in both China—and to a lesser extent Vietnam—more than offset propoor vertical redistribution. Without the horizontal redistribution and reranking, the Gini coefficient for China might have fallen between 1989 and 1997—substantially so.

This paper—a product of the Public Services Team, Development Research

Group—is part of a larger effort in the group to investigate social protection and health issues in selected East Asian countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at awagstaff@worldbank.org. (17 pages)

3560. Setting the Trade Policy Agenda: What Roles for Economists?

Kym Anderson
(April 2005)

Economists have influenced the trade policy agenda for establishing multilateral trade rules, disciplines, and procedures, and for negotiating most-favored nation and preferential reductions in trade barriers and subsidies, in addition to affecting the agenda for unilateral policy reform. These roles are considered in turn, before focusing on the economists' contribution through quantifying the extent and effects of existing trade distortions and alternative reform initiatives. Many trade distortions remain, however, so Anderson looks at where trade economists' efforts in agenda-setting need to be focused in the years ahead.

This paper—a product of the Trade Team, Development Research Group —is part of a larger effort in the group to better understand the ways trade policy can enhance economic growth and poverty alleviation. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at kanderson@worldbank.org. (33 pages)

3561. Activities, Employment, and Wages in Rural and Semi-Urban Mexico

Dorte Verner
(April 2005)

Verner addresses the labor markets in rural and semi-urban Mexico. The empirical analyses show that nonfarm income shares increase with overall consumption levels and, also, with time. Rural-dwellers in lower quintiles of the consumption distribution tend to earn a larger share of their nonagricultural incomes from wage labor activities. For the poorest, low-productivity wage labor activities are important. The quantile wage regression analysis for rural Mexico shows a rather heterogeneous impact pattern of individual characteristics across the wage distribution on monthly wages. The author's findings reveal that education is key to earning higher wages and that workers in more dispersed rural areas earn less than their peers in semi-urban rural areas (localities with less than 15,000 inhabitants). The rural nonfarm sector is heterogeneous and includes a great variety of activities and productivity levels across nonfarm jobs. Moreover it can reduce poverty in a couple of distinct but qualitatively important ways in rural Mexico. The analysis of nonfarm employment in rural Mexico suggests that the two key determinants of access to employment and productivity in nonfarm activities are education and location.

This paper—a product of the Environmentally and Socially Sustainable Development, Latin America and the Caribbean Region—is part of a larger effort in the region to reduce poverty and increase social inclusion. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grissel Prieto room I6-226, telephone 202-473-6346, fax 202-676-0199, email address gprieto@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dverner@worldbank.org. (40 pages)

3562. Antidumping and Safeguard Mechanisms: The Brazilian Experience, 1988–2003

Honorio Kume and Guida Piani
(April 2005)

Kume and Piani focus on the evaluation of the antidumping regime from 1988 through 2003. During these years the Brazilian economy had to cope with several periods of macroeconomic instability and overvaluation of the domestic currency, particularly from 1990–92 and 1994–98. As a result, from 1992 through 1998, import volumes increased significantly. Although during these years, the demand for antidumping protection was growing, the number of investigations concluded with an affirmative determination was only 52 percent. The authors explain that the institutional framework in charge of administering the antidumping regime was subject to several reforms. Along this process, the Ministry of Development, Industry, and Trade saw its role strengthened. This ministry has a more protectionist bias than the Ministry of Finance that, during the initial years of the liberalization program, played a prominent role in decisions regarding antidumping investigations and measures.

The authors conclude that in comparison with other countries that are important users of the antidumping mechanism, the Brazilian experience reveals two interesting features:

- A relatively small rate of final positive determinations.
- A tradition of applying antidumping duties in amounts that on average have been quite lower than the full dumping margins.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to support trade liberalization and make trade policy work for development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at kume@ipea.gov.br or guidapiani@ipea.gov.br. (35 pages)

3563. Health Insurance Impacts on Health and Nonmedical Consumption in a Developing Country

Adam Wagstaff and Menno Pradhan
(April 2005)

Wagstaff and Pradhan examine the effects of the introduction of Vietnam's health insurance (VHI) program on health outcomes, health care utilization, and nonmedical household consumption. The use of panel data collected before and after the insurance program's introduction allows them to eliminate any confounding effects due to selection on time-invariant unobservables, and their coupling of propensity score matching with a double-difference estimator allows them to reduce the risk of biases due to inappropriate specification of the outcome regression model. The authors' results suggest that Vietnam's health insurance program impacted favorably on height-for-age and weight-for-age of young school children, and on body mass index among adults. Their results suggest that among young children, VHI increases use of primary care facilities and leads to a substitution away from the use of pharmacists as a source of advice and nonprescribed medicines toward the use of them as a supplier of medicines prescribed by a health professional. Among older children and adults, VHI results in a marked increase in the use of hospital inpatient and outpatient departments. The results also suggest that VHI causes a reduction in annual out-of-pocket expenditures on health and an increase in nonmedical household consumption, including food consumption, but mostly nonfood consumption. The authors' estimate of the VHI-induced reduction in out-of-pocket health spending is considerably smaller than their estimate of the VHI-induced increase in nonmedical consumption, which is consistent with the idea that households hold back their consumption considerably if, through lack of health insurance, they are exposed to the risk of large out-of-pocket expenditures. This is especially plausible in a country where at the time (1993), a single visit to a public hospital cost on average the equivalent of 20 percent of a person's annual nonfood consumption.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to assess the impacts of public policies and programs on human development outcomes. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-311, telephone 202-202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at awagstaff@worldbank.org. (25 pages)

3564. Trade Costs and Location of Foreign Firms in China

Mary Amiti and Beata Smarzynska Javorcik
(April 2005)

Amiti and Javorcik examine the determinants of entry by foreign firms using information on 515 Chinese industries at the provincial level during 1998–2001. The analysis, rooted in the new economic geography, focuses on market and supplier access within and outside the province of entry, as well as production and trade costs. The results indicate that market and supplier access are the most important factors affecting foreign entry. Access to markets and suppliers in the province of entry matters more than access to the rest of China, which is consistent with market fragmentation due to underdeveloped transport infrastructure and informal trade barriers.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to examine the determinants of foreign direct investment in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mamiti@imf.org or bjavorcik@worldbank.org. (32 pages)

3565. Trade Preferences to Small Developing Countries and the Welfare Costs of Lost Multilateral Liberalization

Nuno Limão and Marcelo Olarreaga
(April 2005)

The proliferation of preferential trade liberalization over the past 20 years has raised the question of whether it slows down multilateral trade liberalization. Recent theoretical and empirical evidence indicates this is the case even for unilateral preferences that industrial countries provide to small and poor countries but there is no estimate of the resulting welfare costs. To avoid this stumbling block effect Limão and Olarreaga suggest replacing unilateral preferences by a fixed import subsidy. They argue that this scheme would reduce the drag of preferences on multilateral liberalization and generate a Pareto improvement. More important, the authors provide the first estimates of the welfare cost of preferential liberalization as a stumbling block to multilateral liberalization. By combining recent estimates of the stumbling block effect of preferences with data for 170 countries and over 5,000 products they calculate the welfare effects of the United States, European Union, and Japan switching from unilateral preferences to the developing countries to the import subsidy scheme. Even in a model with no dynamic gains to trade the authors find that the switch produces an annual net welfare gain for the 170 countries ($4,354 million) and for each group: the United States, European Union, and Japan ($2,934 million), the developing countries ($520 million), and the rest of the world ($900 million).

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the political economy of trade protection. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Marcelo Olarreaga may be contacted at molarreaga@worldbank.org. April 2005. (33 pages)

3566. Trade Preferences and Differential Treatment of Developing Countries: A Selective Survey

Bernard Hoekman and Çaglar Özden
(April 2005)

Nonreciprocal trade preferences and provisions in the GATT/WTO that allow developing countries greater leeway to retain or use protectionist policies are two of the central planks of so-called special and differential treatment (SDT) for developing countries in the multilateral trading system. Hoekman and Özden survey the literature on the rationales, institutional features, and economic effectiveness of SDT. A large literature has emerged on SDT in the past 50 years, by both proponents and opponents. They summarize a number of key contributions on the subject, with a special emphasis on the evaluation of the impact of SDT, especially preferential market access. The issue of SDT has become very topical again, following a period during which it was viewed as an outdated concept for the multilateral trading system. The authors therefore devote attention as well to a number of recent contributions that discuss (1) whether there is a continued need for SDT, and (2) how this might be designed from both a development (recipient) objective and from the perspective of the trading system more generally. A major theme of the survey is that most of the issues that are debated today were already being discussed in the 1960s. The authors conclude that those who questioned the value of unilateral preferences have proven to be prescient.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of international migration and remittances on poverty and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at bhoekman@worldbank.org or cozden@worldbank.org. (45 pages)

3567. Reducing Child Malnutrition in Tanzania: Combined Effects of Income Growth and Program Interventions

Harold Alderman, Hans Hoogeveen, and Mariacristina Rossi
(April 2005)

Malnutrition is associated with an inadequate diet, poor health and sanitation services, and insufficient care for young children. A combination of income growth and nutrition interventions are therefore suggested to adequately tackle this issue, yet evidence to support this claim is often not available, especially for African settings. The authors evaluate the joint contribution of income growth and nutrition interventions toward the reduction of malnutrition. Using a four-round panel data set from northwestern Tanzania they estimate the determinants of a child's nutritional status, including household income and the presence of nutrition interventions in the community. The results show that better nutrition is associated with higher income, and that nutrition interventions have a substantial beneficial effect. Policy simulations make clear that if one intends to halve malnutrition rates by 2015 (the Millennium Development Goals objective), income growth will have to be complemented by large-scale program interventions.

This paper—a joint product of the Public Services Team, Development Research Group, and the Tanzania Country Team—is part of a larger effort in the Bank to evaluate the determinants of health outcomes. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, mail stop MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at halderman@worldbank.org, jhoogeveen@worldbank.org, or rossi@economia.uniroma2.it. (27 pages)

3568. Singapore as an Innovative City in East Asia: An Explorative Study of the Perspectives of Innovative Industries

Poh Kam Wong, Yuen Ping Ho, and Annette Singh
(April 2005)

The city-state of Singapore has achieved rapid economic development in the past by its positioning as an efficient business hub in Asia. To remain competitive in the global knowledge economy, however, Singapore needs to move beyond efficiency by developing a strong "innovative" edge as well. This paper examines the challenges that Singapore faces in seeking to do so through an explorative survey of 40 firms from three innovative sectors: high-tech manufacturing industries, knowledge-intensive business services (KIBS), and creative content industries.

Overall, while the survey confirms Singapore's continuing competitive strength in efficiency infrastructure, it also finds a favorable perception of Singapore as an innovative city. Indeed, many of the industry actors indicated that an efficient business infrastructure is a prerequisite for locating their innovative activities in Singapore, suggesting that the relationship between innovation and efficiency is complementary rather than substitutional.

While the study found that intellectual property and its protection are widely recognized by actors in all three sectors, interesting differences exist. In particular, intellectual property protection appears to be of greater concern to the high-tech research and development-intensive manufacturing sector and the creative contents sector than to the KIBS sector. Another interesting difference is that while competition in high-tech innovation tends to be global, competition in creative content tends to have a stronger local or regional dimension.

Public policy in East Asia has traditionally emphasized the development of technological innovation capabilities in the manufacturing sector. In light of the findings, public policymakers may need to be more sensitive to the nuanced differences in policies needed to promote the new creative content industries and the associated supporting KIBS.

This paper—a product of the Development Research Group—was prepared for the East Asia Prospects Study. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kaoru Nabeshima, room MC2-517, telephone 202-473-7880, fax 202-522-1150, email address knabeshima@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Poh Kam Wong may be contacted at bizwpk@nus.edu.sg. (66 pages)

3569. From Efficiency-Driven to Innovation-Driven Economic Growth: Perspectives from Singapore

Kim-Song Tan and Sock-Yong Phang
(April 2005)

This paper looks at Singapore's efforts to transform the economic growth base from one that is predominantly efficiency-driven to one that is more innovation-driven. To accelerate the transition process, the government is aggressively investing in "innovation infrastructure"—systems and institutions that make the city a more conducive environment for innovations. The modus operandi, with a distinctive "winner-picking" flavor, mirrors that of its earlier strategic industrial policy in building up the manufacturing sector. It is also in sync with the new urban growth literature which argues that the success of any innovation-driven growth strategy depends on a city's ability to attract a large community of creative individuals in different fields.

Innovation infrastructure building requires more than putting in the right systems. It also requires a mindset change at various levels of society. This paper looks at how the government's policy philosophy and practices have evolved over time, and discusses the effectiveness of the government-led, strategic supply-push approach in propelling Singapore onto an innovation-driven growth path. It takes into consideration the city-state's underlying comparative advantages (or disadvantages) and asks how Singapore's existing strength in efficiency infrastructure may give it a first mover advantage in attracting creative talent, how its success may be affected by the small size of the economy, and the various political and social constraints that a small sovereign city-state faces. These issues are explored against the backdrop of the keen competition among the major cities in the region to become an innovation hub.

This paper—a product of the Development Research Group—was prepared for the East Asia Prospects Study. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kaoru Nabeshima, room MC2-517, telephone 202-473-7880, fax 202-522-1150, email address knabeshima@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at kstan@smu.edu.sg or syphang@smu.edu.sg. (42 pages)

3570. Taking Stock of Risk Management Techniques for Sovereigns

Stijn Claessens
(April 2005)

Claessens reviews the current state of affairs and thinking on external risk management for developing countries. He tries to identify the reasons behind the limited risk management by sovereigns. Perverse incentives arising from a too generous international safety net, limited access to international financial markets by developing countries arising from low creditworthiness, a limited supply of financial risk management tools suited to developing countries, and a poor supply of skills have inhibited risk management. Another constraint has been the limited attention given to the strategic objectives for risk management. Going forward, the author identifies actions by international financial markets, countries, and international financial institutions that can help improve risk management. These actions include GDP-indexed loans and efforts to develop price and weather indexes.

This paper—a product of the Financial Sector Operations and Policy Department—is part of a larger effort in the department to study how countries can improve their ability to deal with risks. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC9-820, telephone 202-473-3722, fax 202-522-2031, email address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at sclaessens@worldbank.org. (35 pages)

3571. Does Tariff Liberalization Increase Wage Inequality? Some Empirical Evidence

Branko Milanovic and Lyn Squire
(April 2005)

The objective of the paper is to answer an often asked question: If tariff rates are reduced, what will happen to wage inequality? Milanovic and Squire consider two types of wage inequality: between occupations (skills premium) and between industries. They use two large databases of wage inequality that have recently become available and a large data set of average tariff rates covering the period between 1980 and 2000. The authors find that tariff reduction is associated with higher inter-occupational and inter-industry inequality in poorer countries (those below the world median income) and the reverse in richer countries. However, the results for inter-occupational inequality must be treated with caution.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to study globalization and inequality. The study was funded by the Bank's Research Support Budget under the research project "Globalization and Middle Classes." Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, mail stop MC3-306, telephone 202-473-3902, fax 202-522-1153, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Branko Milanovic may be contacted at bmilanovic@ceip.org. (63 pages)

3572. Evaluation of the National School for Professional Technology Education in Mexico (CONALEP)

Gladys López-Acevedo
(April 2005)

The National School for Professional Technology Education (CONALEP) is Mexico's largest and oldest technical education system. CONALEP serves low-income students at the upper-secondary school level in Mexico. The labor market performance of CONALEP graduates has been evaluated four times in the past. These evaluations have yielded encouraging results, showing that CONALEP's graduates find jobs faster and earn higher wages than similar "control" groups. In contrast, using nonexperimental methods, this paper suggests that CONALEP's graduates might earn higher wages but do not find jobs faster compared with control groups.

This paper—a product of the Mexico Country Office, Latin America and the Caribbean—was part of the "Training Mechanisms Reform" project at the Bank. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Silvia Marquina, room I4-046, telephone 202-473-4023, fax 202-522-2112, email address smarquinaleon@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at gacevedolopez@worldbank.org. (41 pages)

3573. The Effects of Migration on Child Health in Mexico

Nicole Hildebrandt and David J. McKenzie
(April 2005)

Hildebrandt and McKenzie investigate the impact of international migration on child health outcomes in rural Mexico using a nationally representative demographic survey. They use historic migration networks as instruments for current household migration to the United States in order to correct for the possible endogeneity of migrant status. They find that children in migrant households have lower rates of infant mortality and higher birthweights. The authors study the channels through which migration may affect health outcomes and find evidence that migration raises health knowledge in addition to the direct effect on wealth. However they also find that preventative health care, such as breastfeeding and vaccinations, is less likely for children in migrant households. These results provide a broader and more nuanced view of the health consequences of migration than is offered by the existing literature.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of international migration and remittances on poverty and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. David McKenzie may be contacted at mcken@stanford.edu. (35 pages)

3574. Wage Differentials between the Public and Private Sectors in India

Elena Glinskaya and Michael Lokshin
(April 2005)

Glinskaya and Lokshin use 1993–94 and 1999–2000 India Employment and Unemployment surveys to investigate wage differentials between the public and private sectors as well as workers' decisions to join a particular sector. To obtain robust estimates of the wage differential, they apply three econometric techniques each relying on a different set of assumptions about the process of job selection. All three methods show that differences in wages between public sector workers and workers in the formal-private and informal-casual sectors are positive and high. Estimates show that, on average, the public sector premium ranges between 62 percent and 102 percent over the private-formal sector, and between 164 percent and 259 percent over the informal-casual sector, depending on the choice of methodology. The authors' review of wage differentials (estimated using similar methodologies) across the world shows that India has one of the largest differentials between wages of public workers and workers in the formal private sector. The wage differentials in India tend to be higher in rural as compared with urban areas, and are higher among women than among men. The wage differential also tends to be higher for low-skilled workers. There is considerable evidence of an increase in the wage differential between 1993–94 and 1999–2000.

This paper—a joint product of the Poverty Reduction and Economic Management Sector Unit, South Asia Region, and the Poverty Team, Development Research Group—is part of a larger effort in the Bank to understand the labor issues in public sector reforms. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1153, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at eglinskaya@worldbank.org or mlokshin@worldbank.org. (36 pages)

3575. The Kin System as a Poverty Trap?

Karla Hoff and Arijit Sen
(April 2005)

An institution found in many traditional societies is the extended family system (kin system), an informal system of shared rights and obligations among extended family for the purpose of mutual assistance. In predominantly nonmarket economies, the kin system is a valuable institution providing critical community goods and insurance services in the absence of market or public provision. But what happens when the market sector grows in the process of economic development? How do the members of kin groups respond, individually and collectively, to such changes? When the kin system "meets" the modern economy, does the kin system act as a "vehicle of progress" helping its members adapt, or as an "instrument of stagnation" holding back its members from benefiting from market development? In reality, the consequences of membership in a kin group have been varied for people in different parts of the world. Hoff and Sen characterize the conditions under which the kin system becomes a dysfunctional institution when facing an expanding modern economy.

The authors first show that when there are moral hazard problems in the modern sector, the kin system may exacerbate them. When modern sector employers foresee that, they will offer employment opportunities on inferior terms to members of ethnic groups that practice the kin system. These entry barriers in the market, in turn, create an incentive for some individuals to break ties with their kin group, which hurts members of the group who stay back in the traditional sector. The authors then show in a simple migration model that if a kin group can take collective action to raise exit barriers, then even if migrating to the modern sector and breaking ties increases aggregate welfare (and even if a majority of members are expected to gain *ex post,* after the resolution of uncertainty about the identity of the winners and losers), a majority of agents within a kin group may support *ex ante* raising the exit barrier to prevent movement to the modern sector. This result is an example of the bias toward the status quo analyzed by Raquel Fernandez and Dani Rodrik in the context of trade reform. The authors do not claim that all kin groups will necessarily exhibit such a bias against beneficial regime changes. But they provide a clear intuition about the forces that can lead to the collective conservatism of a kin system facing expanding opportunities in a market economy—forces that can lead the kin group to become a poverty trap for its members.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand social exclusion—why certain social groups in certain localities remain poor, while others enjoy greater mobility. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tourya Tourougui, room MC3-342, telephone 202-458-7431, fax 202-522-3518, email address ttourougui@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at khoff@worldbank.org or senarijit@vsnl.net. (28 pages)

3576. Poverty in Rural and Semi-Urban Mexico during 1992–2002

Dorte Verner
(April 2005)

This paper analyzes poverty in rural and semi-urban areas of Mexico (localities with less than 2,500 and 15,000 inhabitants, respectively) and provides guidance on a social agenda and poverty alleviation strategy for rural Mexico. The analyses are based on INIGH and ENE data sets for 1992–2002. Monetary extreme poverty affected 42 percent of the rural dwellers in dispersed rural areas and 21 percent in semi-urban areas in 2002, slightly less than one decade earlier. Most of the rural poor live in dispersed rural areas and 13.2 million people live in poverty in rural Mexico with less than 15,000 inhabitants. It is disproportionately a feature of households whose main job is in the agricultural sector, as self-employed farmers or rural laborers, and that have at most a primary education. However, the incidence of extreme rural poverty has declined since 1996 but at a slower pace than the decline in urban poverty. Hence, the rural-urban poverty gap increased in recent years and in some places extreme poverty is at least four times higher in rural than in urban areas. Moreover, not only is the income gap in urban areas increasing, but also the gap between richer and poorer segments of the population in the rural areas is growing. Finally, the gap between rich and poor regions is still large.

This paper—a product of the Division, Latin America and the Caribbean Region—is part of a larger effort in the region to reduce poverty and increase social inclusion. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grissel Prieto, room I6-226, telephone 202-473-6346, fax 202-676-0199, email address gprieto@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at dverner@worldbank.org. (39 pages)

3577. Testing Genuine Saving

Kirk Hamilton
(April 2005)

The World Bank has been publishing estimates of adjusted net or "genuine" saving since 1999. This measure of saving treats depletion of natural resources as a type of economic depreciation. Hamilton uses recent theoretical results relating growth in saving to growth in future consumption to provide a test of genuine saving using historical data. Did measured genuine saving in 1976, for example, "predict" the observed changes in consumption over subsequent decades? The author tests four alternative measures of saving econometrically. The worst measure, in terms of explained variation, is traditional net saving. Genuine saving adjusted to reflect population growth exhibits the worst fit with theory. Both gross saving and genuine saving perform better, with good concordance with theory, while genuine saving exhibits a moderate advantage in terms of goodness of fit.

This paper—a product of the Environment Department—is part of a larger effort in the department to foster sustainable development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Alexandra Sears, room MC5-206, telephone 202-458-2819, fax 202-522-1735, email address asears@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at khamilton@worldbank.org. (13 pages)

3578. International Migration, Human Capital, and Entrepreneurship: Evidence from Philippine Migrants' Exchange Rate Shocks

Dean Yang
(April 2005)

Millions of households in developing countries receive financial support from family members working overseas. How do the economic prospects of overseas migrants affect origin-household investments—in particular, in child human capital and household enterprises? Yang examines Philippine households' responses to overseas members' economic shocks. Overseas Filipinos work in dozens of foreign countries which experienced sudden (and heterogeneous) changes in exchange rates due to the 1997 Asian financial crisis. Appreciation of a migrant's currency against the Philippine peso leads to increases in household remittances received from overseas. The estimated elasticity of Philippine peso remittances with respect to the Philippine/foreign exchange rate is 0.60. In addition, these positive income shocks lead to enhanced human capital accumulation and entrepreneurship in origin households. Favorable migrant shocks lead to greater child schooling, reduced child labor, and increased educational expenditure in origin households. More favorable exchange rate shocks also raise hours worked in self-employment and lead to greater entry into relatively capital-intensive enterprises by migrants' origin households.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of international migration and remittances on development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact

Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewittworldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at deanyang@umich.edu. (52 pages)

3579. A Poverty-Inequality Trade-off?

Martin Ravallion
(April 2005)

The idea that developing countries face a trade-off between poverty and inequality has had considerable influence on thinking about development policy. The experience of developing countries in the 1990s does not, however, reveal any sign of a systematic trade-off between measures of absolute poverty and relative inequality. Indeed, falling inequality tends to come with falling poverty incidence. And rising inequality appears more likely to be putting a brake on poverty reduction than to be facilitating it. However, there is evidence of a trade-off for absolute inequality, suggesting that those who want a lower absolute gap between the rich and the poor must in general be willing to see lower absolute levels of living for poor people.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to assess the trade-offs faced in economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1153, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mravallion@worldbank.org. (21 pages)

3580. On the Contribution of Demographic Change to Aggregate Poverty Measures for the Developing World

Martin Ravallion
(April 2005)

Recent literature and new data help determine plausible bounds to some key demographic differences between the poor and nonpoor in the developing world. Ravallion estimates that selective mortality—whereby poorer people tend to have higher death rates—accounts for 10–30 percent of the developing world's trend rate of "$1 a day" poverty reduction in the 1990s. However, in a neighborhood of plausible estimates, differential fertility—whereby poorer people tend also to have higher birth rates—has had a more than offsetting poverty-increasing effect. The net impact of differential natural population growth represents 10–50 percent of the trend rate of poverty reduction.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to quantify the relative importance of the various factors impinging on rates of poverty reduction. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1151, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mravallion@worldbank.org. (27 pages)

3581. Brain Waste? Educated Immigrants in the U.S. Labor Market

Aaditya Mattoo, Ileana Cristina Neagu, and Çaglar Özden
(April 2005)

Mattoo, Neagu, and Özden investigate the occupational placement of immigrants in the U.S. labor market using census data. They find striking differences among highly educated immigrants from different countries, even after they control for individuals' age, experience, and level of education. With some exceptions, educated immigrants from Latin American and Eastern European countries are more likely to end up in unskilled jobs than immigrants from Asia and industrial countries. A large part of the variation can be explained by attributes of the country of origin that influence the quality of human capital, such as expenditure on tertiary education and the use of English as a medium of instruction. Performance is adversely affected by military conflict at home which may weaken institutions that create human capital and lower the threshold quality of immigrants. The selection effects of U.S. immigration policy also play an important role in explaining cross-country variation. The observed under-placement of educated migrants might be alleviated if home and host countries cooperate by sharing information on labor market conditions and work toward the recognition of qualifications.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the impact of international migration on poverty and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at amattoo@worldbank.org, ineagu@worldbank.org, or cozden@worldbank.org. (31 pages)

3582. Does Temporary Migration Have to be Permanent?

Mohammad Amin and Aaditya Mattoo
(April 2005)

The choice between temporary and permanent migration is today central to the design of migration policies. Amin and Mattoo draw a distinction between the two types of migration on the basis of the associated social cost and the dynamics of learning by migrants. They find that unilateral migration policies are globally inefficient because they lead to too much permanent migration and too little temporary and overall migration. Existing international agreements on labor mobility, such as the World Trade Organization's General Agreement on Trade in Services, have failed to do better because they seek primarily to induce host countries to make commitments to allow entry. Instead, Pareto gains and more liberal migration could be achieved through multilateral agreements that enable host countries to commit to repatriation.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to assess the implications of liberalizing trade in services. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433.

Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@ worldbank.org. Policy Research Working Papers are also posted on the Web at http:/ /econ.worldbank.org. The authors may be contacted at mamin@worldbank.org or a mattoo@worldbank.org. (51 pages)

3583. Labor Market Dynamics in Developing Countries: Comparative Analysis using Continuous Time Markov Processes

Mariano Bosch and William Maloney
(April 2005)

Bosch and Maloney study the dynamics of three developing country labor markets using recent advances in the estimation of continuous time Markov processes. They first examine the flows of workers among five states: three types of paid labor, unemployment, and out of the labor force. The authors find a high degree of commonality in patterns of worker flows among the three countries and attempt to compare the flexibility of the markets by examining an index of overall "mobility." Second, they seek to establish whether the issues of advanced country labor markets apply to developing country markets or whether the latter constitute a different phylum. Paralleling the mainstream literature on the role of being out of the labor force as discouraged unemployment, the authors then identify some common stylized facts about the role of the informal self-employed and salaried sectors and to what degree they serve as a holding pattern versus a desirable alternative to formal sector work. In the process, the authors identify very strong differences in mobility patterns between men and women and attempt to shed some light on whether these differences arise from discrimination or perhaps instead the constraints imposed by household responsibilities. Finally, they study labor market adjustment across the business cycle in Mexico and identify patterns of job creation and destruction among the three paid sectors and confirm the mainstream view of the role of out of the labor force as a procyclical phenomenon.

This paper—a product of the Office of the Regional Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to understand the functions of labor markets in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Adriana Rodriguez, room I8-012, telephone 202-473-5372, fax 202-522-7528, email address arodriguez@ worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at m.bosch@lse.ac.edu or wmaloney@worldbank.org. (42 pages)

3584. Business Cycle Synchronization and Regional Integration: A Case Study for Central America

Norbert Fiess
(April 2005)

In early January 2003, the United States and Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua launched official negotiations for the Central American Free Trade Agreement (CAFTA), a treaty that would expand NAFTA-style trade barrier reductions to Central America. With deeper trade integration between Central America and the United States, it is expected that there will be closer links in business cycles between Central American countries and the United States. The paper finds a relatively low degree of business cycle synchronization within Central America as well as between Central America and the United States. The business cycle synchronization is expected to increase only modestly with further trade expansion, making the coordination of macroeconomic policies within CAFTA somewhat less of a priority.

This paper—a product of the Office of the Regional Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to understand regional integration. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ruth Izquierdo, mail stop I8-801, telephone 202-458-4161, fax 202-522-7528, email address rizquierdo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at nfiess@ worldbank.org. (19 pages)

3585. Comparative Review of Microfinance Regulatory Framework Issues in Benin, Ghana, and Tanzania

Joselito Gallardo, Korotoumou Ouattara, Bikki Randhawa, and William F. Steel
(April 2005)

Gallardo, Ouattara, Randhawa, and Steel investigate the microfinance regulatory regimes in Benin, Ghana, and Tanzania, with a view to identifying key issues and lessons on how the overall regulatory framework affects integration of microfinance institutions into the financial system. The authors find that recognizing different tiers of both regulated and unregulated institutions in a financial structure facilitates financial deepening and outreach to otherwise underserved groups in urban and rural areas. That environment promotes sustainable microfinance under shared performance standards and encourages regulatory authorities to develop appropriate prudential regulations and staff capacity. Case studies of the three countries raise important issues on promoting microfinance development vis-à-vis regulating them. Laws to regulate activities other than intermediation of public deposits into loans can result in disproportionately restrictive and unmanageable standards, even as dynamic microfinance sectors have emerged without conducive regulatory regimes. The authors use the three countries' regulatory experiences to highlight the importance of differentiating when prudential supervision is warranted and when regulatory oversight suffices, and to identify the agencies to carry out regulation. They address an important issue that has received scant attention, measuring and paying for the costs of regulating microfinance, and the need to build technical capacity of supervisory and regulatory staff.

This paper—a joint product of the Financial Sector Group, Africa Technical Families, and the Financial Sector Operations and Policy Department—is part of a larger effort in the Bank to document various experiences and provide guidance on how the regulatory framework can best promote the expansion of microfinance as part of the financial system's development and outreach. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yeshareg Dagne, room J10-

204, telephone 202-473-4095, fax 202-473-8575, email address ydagne@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jgallardo@worldbank.org, kouattara@worldbank.org, brandhawa@worldbank.org, or wsteel@worldbank.org. (34 pages)

3586. Capital Markets and E-Fraud: Policy Note and Concept Paper for Future Study

Tom Kellermann and Valerie McNevin
(May 2005)

The technological dependency of securities exchanges on internet-based (IP) platforms has dramatically increased the industry's exposure to reputation, market, and operational risks. In addition, the convergence of several innovations in the market are adding stress to these systems. These innovations affect everything from software to system design and architecture. These include the use of XML (extensible markup language) as the industry IP language, STP or straight through processing of data, pervasive or diffuse computing and grid computing, as well as the increased use of Internet and wireless.

The fraud is not new, rather, the magnitude and speed by which fraud can be committed has grown exponentially due to the convergence of once private networks on-line. It is imperative that senior management of securities markets and brokerage houses be properly informed of the negative externalities associated with e-brokerage and the possible critical points of failure that exist in today's digitized financial sector as they grow into tomorrow's exchanges. The overwhelming issue regarding e-finance is to determine the true level of understanding that senior management has about on-line platforms, including the inherent risks and the depth of the need to use it wisely. Kellermann and McNevin attempt to highlight the various risks that have been magnified by the increasing digitalization of processes within the brokerage arena and explain the need for concerted research and analysis of these as well as the profound consequences that may entail without proper planning.

An effective legal, regulatory, and enforcement framework is essential for creating the right incentive structure for market participants. The legal and regulatory framework should focus on the improvement of internal monitoring of risks and vulnerabilities, greater information sharing about these risks and vulnerabilities, education and training on the care and use of these technologies, and better reporting of risks and responses. Public/private partnerships and collaborations also are needed to create an electronic commerce (e-commerce) environment that is safe and sound.

This paper—a product of the Financial Sector Operations and Policy Department—is part of a larger effort in the department to establish electronic safety and soundness in e-finance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tom Kellermann, room MC9-818, telephone 202-458-5077, fax 202-522-2031, email address tkellermann@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Valerie McNevin may be contacted at vmcnevin@worldbank.org. (25 pages)

3587. The Political Economy of Antidumping and Safeguards in Argentina

Julio J. Nogués and Elías Baracat
(May 2005)

Beginning in the late 1980s, Argentina implemented a series of reforms that were revolutionary in speed and scope, including trade liberalization. After the implementation of these policies, a record number of antidumping petitions came forward. Under a situation of high inflation, the government reinforced its fiscal and monetary policies by announcing that it would minimize the use of such measures. The flexible disciplines of the existing domestic antidumping regulations facilitated this objective.

Later, when the GATT/WTO-sanctioned trade remedies were implemented, the government made a serious attempt to establish discipline by including liberal regulations and creating special institutional arrangements. A presumption built into the construction of the new mechanisms was that adhering to WTO requirements would strengthen the resistance against protection. This presumption turned out to be false. Changing circumstances, including severe peso overvaluation, had significant effects on the number and outcome of antidumping investigations.

Regarding safeguards, the government followed the letter and the spirit of the WTO agreement. In relation to the number of petitions, few measures have been implemented. Rejections were based on a concern for consumer costs and on failure of the industry seeking protection to provide a convincing modernization plan. This, plus the fact that some cases were brought to the WTO Dispute Settlement Body, have made safeguards a less attractive instrument for protection-seekers than antidumping.

An important positive side of the story is that unlike previous balance of payments adjustments, in spite of the major crisis that followed the recent devaluation, the hard-won liberalization has been maintained.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the costs and benefits of using the international agreements to facilitate and reinforce domestic trade reforms. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jnogues@infovia.com.ar or eliasbaracat@uolsinectis.comar. (39 pages)

3588. The Contribution of Skilled Immigration and International Graduate Students to U.S. Innovation

Gnanaraj Chellaraj, Keith E. Maskus, and Aaditya Mattoo
(May 2005)

The impact of international students and skilled immigration in the United States on innovative activity is estimated using a model of idea generation. In the main specification a system of three equations is estimated, where dependent variables are total patent applications, patents awarded to U.S. universities, and patents awarded to other U.S. entities, each scaled by the domestic labor force. Results indicate that both international graduate students and skilled immigrants have a significant and positive impact on future patent applications, as well as on future patents awarded to university and nonuniversity institutions. The central estimates suggest that a 10 percent increase in the number of foreign graduate students would raise patent applications by 4.7 percent, university patent grants by 5.3 percent, and nonuniversity patent grants by 6.7 percent. Thus, reductions in foreign graduate students from visa restrictions could significantly reduce U.S. innovative activity. Increases in skilled immigration also have a positive, but smaller, impact on patenting.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the implications of trade in services. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at gnanaraj_chellaraj@moh.gov.sg, maskus@colorado.edu, or amattoo@worldbank.org. (33 pages)

3589. Access to Financial Services: A Review of the Issues and Public Policy Objectives

Stijn Claessens
(May 2005)

Claessens reviews the evidence on the importance of finance for economic well-being, provides data on the degree of use of basic financial services by households and firms across a sample of countries, assesses the desirability of more universal access, and overviews the macroeconomic, legal, and regulatory obstacles to access using general evidence and case studies. Although access to finance can be very beneficial, the data show that universal use is far from prevalent in many countries, especially developing countries. At the same time, universal access has generally not been a public policy objective and is surely not easily achievable in most countries. Countries can, however, undertake many actions to facilitate access to financial services, including through strengthening their institutional infrastructures, liberalizing and opening up their markets and facilitating greater competition, and encouraging innovative use of knowhow and technology. Government attempts and interventions to directly broaden the provision of access to finance, however, are fraught with risks and costs, among others, the risk of missing the targeted groups. The author concludes with possible global actions aimed at improving data on access and use, and areas for further analysis to help identify the constraints to broadening access.

This paper—a product of the Financial Operations Sector and Policy Department—is part of a larger effort in the department to develop deep, efficient, and inclusive financial sectors that will serve all members of society, including the poor. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC9-820, telephone 202-473-3722, fax 202-522-2031, email address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at cclaessens@worldbank.org. (38 pages)

3590. The Cost of Compliance with Product Standards for Firms in Developing Countries: An Econometric Study

Keith E. Maskus, Tsunehiro Otsuki, and John S. Wilson
(May 2005)

Standards and technical regulations exist to protect consumer safety or to achieve other goals, such as ensuring the interoperability of telecommunications systems, for example. Standards and technical regulations can, however, raise substantially both start-up and production costs for firms. Maskus, Otsuki, and Wilson develop econometric models to provide the first estimates of the incremental production costs for firms in developing nations in conforming to standards imposed by major importing countries. They use firm-level data generated from 16 developing countries in the World Bank Technical Barriers to Trade (TBT) Survey Database. Their findings indicate that standards do increase short-run production costs by requiring additional inputs of labor and capital. A 1 percent increase in investment to meet compliance costs in importing countries raises variable production costs by between 0.06 and 0.13 percent, a statistically significant increase. The authors also find that the fixed costs of compliance are nontrivial—approximately $425,000 per firm, or about 4.7 percent of value added on average.

The results may be interpreted as one indication of the extent to which standards and technical regulations might constitute barriers to trade. While the relative impact on costs of compliance is relatively small, these costs can be decisive factors driving export success for companies. In this context, there is scope for considering that the costs associated with more limited exports to countries with import regulations may not conform to World Trade Organization rules encouraging harmonization of regulations to international standards, for example. Policy solutions then might be sought by identifying the extent to which subsidies or public support programs are needed to offset the cost disadvantage that arises from nonharmonized technical regulations.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the linkages between trade, nontariff barriers, and standards. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at maskus@colorado.edu, otsuki@osipp.osaka-u.ac.jp, or jswilson@worldbank.org. (35 pages)

3591. Antidumping Policies and Safeguard Measures in the Context of Costa Rica's Economic Liberalization

Ricardo Monge-González and Francisco Monge-Ariño
(May 2005)

This paper reviews the most important changes, both in the economy and in the legal and institutional framework, to deal with unfair trade practices that Costa Rica has experienced during its trade liberalization process. It also evaluates whether the sectors that as a result of such a process have been facing increased foreign competition, and may have attempted to use the World Trade Organization (WTO) rules adopted by Costa Rica as a protectionist instrument.

Costa Rica's legal framework against unfair trade practices at the multilateral level emerged when the country adopted the WTO rules on antidumping policies and safeguard measures. That has been reinforced at the bilateral level through the subscription of free trade agreements with Central America, Mexico, the Dominican Republic, Chile, and Canada.

So far, only six antidumping petitions and five safeguards have been received by the government. In reviewing these petitions, the government has paid particular attention to the impact of any action on the competitiveness of the domestic market and on the possibility that it would support modernization of the industry. Behind the political acceptance of this disciplined approach lies widespread recognition of the social as well as economic progress that liberalization has supported.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to explore the extent to which Costa Rican import-substituting activities had used antidumping and safeguard measures as new protection during the economic liberalization process. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at rmonge@caatec.org or monge-arino.1@osu.edu. (42 pages)

3592. Which Inequality Matters? Growth Evidence based on Small Area Welfare Estimates in Uganda

Youdi Schipper and Johannes G. Hoogeveen
(May 2005)

Existing empirical studies on the relation between inequality and growth have been criticized for their focus on income inequality and their use of cross-country data sets. Schipper and Hoogeveen use two sets of small area welfare estimates—often referred to as poverty maps—to estimate a model of rural per capita expenditure growth for Uganda between 1992 and 1999. They estimate the growth effects of expenditure and education inequality while controlling for other factors, such as initial levels of expenditure and human capital, family characteristics, and unobserved spatial heterogeneity. The authors correct standard errors to reflect the uncertainty due to the fact that they use estimates rather than observations. They find that per capita expenditure growth in rural Uganda is affected positively by the level of education as well as by the degree of education inequality. Expenditure inequality does not have a significant impact on growth.

This paper—a product of the Social Protection Team, Human Development Network—is part of a larger effort in the network to understand the relation between poverty, growth, and inequality. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tasneem Usmani, room G7-076, telephone 202-473-1351, fax 202-522-7247, email address tusmani@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at yschipper@feweb.vu.nl or jhoogeveen@worldbank.org. (24 pages)

3593. The Role of Factoring for Financing Small and Medium Enterprises

Leora Klapper
(May 2005)

Around the world, factoring is a growing source of external financing for corporations and small and medium-size enterprises (SMEs). What is unique about factoring is that the credit provided by a lender is explicitly linked to the value of a supplier's accounts receivable and not the supplier's overall creditworthiness. Therefore, factoring allows high-risk suppliers to transfer their credit risk to their high-quality buyers. Factoring may be particularly useful in countries with weak judicial enforcement and imperfect records of upholding seniority claims because receivables are sold, rather than collateralized, and factored receivables are not part of the estate of a bankrupt SME. Empirical tests find that factoring is larger in countries with greater economic development and growth and developed credit information bureaus. In addition, the author finds that creditor rights are not related to factoring. The author also discusses "reverse factoring," which is a technology that can mitigate the problem of borrowers' informational opacity in business environments with weak information infrastructures if only receivables from high-quality buyers are factored. She illustrates the case of the Nafin reverse factoring program in Mexico and highlights how the use of electronic channels and a supportive legal and regulatory environment can cut costs and provide greater SME services in emerging markets.

This paper—a product of the Finance Division, Development Research Group—is part of a larger effort in the group to study access to financing. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, room MC3-456, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at lklapper@worldbank.org. (38 pages)

3594. Democratization and Clientelism: Why are Young Democracies Badly Governed?

Philip Keefer
(May 2005)

Keefer identifies systematic performance differences between younger and older democracies: younger democracies are more corrupt; exhibit less rule of law, lower levels of bureaucratic quality, and lower secondary school enrollments; and spend more on public investment and government workers. Only one theory explains the effects of democratic age on the wide range of policy outcomes examined here—the inability of political competitors in younger democracies to make credible promises to citizens. This explanation, first advanced in Keefer and Vlaicu (2004), offers a concrete interpretation of what political "institutionalization" might mean, and why it is that young democracies frequently fail to become older and well-performing democracies. A variety of tests support this explanation against alternatives. The effect of democratic age remains large even after controlling for the possibilities that voters are less well-informed in young democracies, that young democracies have systematically different political and electoral institutions, or that young democracies exhibit more polarized societies.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand the political dynamics of development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-300, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at pkeefer@worldbank.org. (49 pages)

3595. How Widespread were Private Investment and Regulatory Reform in Infrastructure Utilities during the 1990s?

Antonio Estache and Ana Goicoechea
(May 2005)

Estache and Goicoechea provide a snapshot as of 2004 of the share of countries with an "independent" regulatory agency and with at least some private sector financing of its sectoral investment needs for electricity, water and sanitation, and telecommunications. Among other things, they show that:

- For respectively, electricity, water and sanitation, and telecommunications, 51 percent, 21 percent, and 66 percent of the developing countries in the sample have an "independent" regulator, that is, an agency separate from a ministry and from the operator.
- For respectively, electricity generation, electricity distribution, water and sanitation, and telecommunications, 47 percent, 36 percent, 35 percent, and 59 percent of the developing countries in the sample have at least some private sector financing.
- The shares of both agencies and private sector involvement tend to increase with income levels.
- Latin and Central America and Eastern Europe are outliers among regions as almost systematically they have among the highest shares for both indicators across sectors (except water).

This paper—a product of the Office of the Vice President, Infrastructure Network—is part of a larger effort in the network to facilitate analytical research in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ana Goicoechea, room H3-182, telephone 202-473-5855, fax 202-522-3738, email address agoicoechea@worldbank.org. Policy Research Working Papers are also posted on the Web at http:/econ.worldbank.org. Antonio Estache may be contacted at aestache@worldbank.org. (24 pages)

3596. Household Savings and Residential Mobility in Informal Settlements

Somik V. Lall, Ajay Suri, and Uwe Deichmann
(May 2005)

Strategies to help the one billion people worldwide who live in informal settlements have mainly focused on slum upgrading, sites and services programs, and tenure security. In contrast, there has been less attention on what enables slum dwellers to transition into the formal housing sector, which has the dual benefits of improving service access and escaping social stigma. In this paper Lall, Suri, and Deichmann investigate residential mobility among slum dwellers in Bhopal, India. Their analysis shows that one in five households succeeds in getting out of a slum settlement, and a major determinant is the household's ability to save on a regular basis. Due to limited outreach of institutional housing finance, most slum dwellers rely solely on household savings for purchasing a house. These findings underscore the urgent need to improve savings instruments for slum dwellers and to downmarket housing finance to reach the poorest residents of rapidly growing cities in developing countries.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to improve urban management and the collection, use, and public disclosure of spatially detailed information and analytical methods. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yasmin D'Souza, room MC2-622, telephone 202-473-1449, fax 202-522-3230, email address ydsouza@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at slall@worldbank.org, or udeichmann@worldbank.org. (24 pages)

3597. Gifted Kids or Pushy Parents? Foreign Acquisitions and Plant Performance in Indonesia

Jens Matthias Arnold and Beata Smarzynska Javorcik
(May 2005)

Arnold and Javorcik use micro data from the Indonesian Census of Manufacturing to analyze the causal relationship between foreign ownership and plant productivity. To control for the possible endogeneity of the FDI decision, the difference in differences approach is combined with a matching technique. An advantage of this novel method is the ability to follow the timing of the observed changes in productivity and other aspects of plant performance. The results suggest that foreign ownership leads to significant productivity improvements in the acquired plants. The improvements become visible in the acquisition year and continue in the subsequent periods. After three years, the acquired plants outperform the control group in terms of productivity by 34 percentage points. The data also suggest that the rise in productivity is a result of restructuring, as acquired plants increase their investment outlays, employment, and wages. Foreign ownership also appears to enhance the integration of plants into the global economy through increased exports and imports.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to improve our understanding of host country effects on foreign direct investment inflows. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jarnold1@worldbank.org or bjavorcik@worldbank.org. (35 pages)

3598. Quantitative Analyses of Crises: Crisis Identification and Causality

Yoichiro Ishihara
(May 2005)

Studies use different conceptual and operational definitions of crises. The different crisis identifications can lead to inconsistent conclusions and policy formulation even if the same analytical framework is applied. Also, most studies focus on only a few types of crises. This narrow focus on crises may not capture the multidimensionality of crises. Seven crisis types are analyzed, namely (1) liquidity type banking crises, (2) solvency type banking crises, (3) balance of payments crises, (4) currency crises, (5) debt crises, (6) growth rate crises, and (7) financial crises. Crisis data were collected from 15 emerging economies in 1980–2002 on a quarterly basis. The crisis identification exercise finds that multidimensionality in which different crisis types occur in short periods is one of the most important characteristics of recent crises. Further, the Granger causality tests in five Asian economies (Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand) find that currency crises tend to trigger other types of crises, and therefore exchange rate management is essential.

This paper—a product of the Poverty Reduction and Economic Management Sector Department, East Asia and Pacific Region—is part of a larger effort in the region to gain a better understanding of crises in emerging economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Walter Meza-Cuadra, room MC8-144, telephone 202-458-8950, fax 202-522-1557, email address wmezacuadra@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at yishihara@worldbank.org. (26 pages)

3599. Core Indicators for Determinants and Performance of the Electricity Sector in Developing Countries

Tooraj Jamasb, David Newbery, and Michael Pollitt
(May 2005)

Since the early 1990s, substantial resources and efforts have been spent on implementing market-oriented electricity reforms in developing countries. While there are important sectoral, economic, and social dimensions involved in electricity reform, empirical analysis and evaluation of reforms have been of limited use for testing the economic rationale of reforms and policy advice. This may partly be attributed to a lack of generally accepted and measured indicators for monitoring the progress, impacts, and performance of reforms. In this paper the authors propose a set of indicators as a first step toward filling this gap and developing a coherent framework for studying electricity reform in developing countries that covers resource and institutional endowments, key reform steps, market structure, performance, and various impacts.

This paper—a product of the Growth and Investment Team, Development Research Group—was prepared as part of the research program on Industrial Organization Policy for Development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Tooraj Jamasb may be contacted at tooraj.jamasb@econ.cam.ac.uk. (34 pages)

3600. What Drives Corporate Governance Reform? Firm-Level Evidence from Eastern Europe

Leora F. Klapper, Luc Laeven, and Inessa Love
(May 2005)

Klapper, Laeven, and Love study differences in the use of two corporate governance provisions—cumulative voting and proxy by mail voting—in a sample of 224 firms located in four Eastern European countries. They find a significant relationship between ownership structure and the use of corporate governance provisions. Firms with a controlling owner (owning more than 50 percent of shares) are less likely to adopt either of the two provisions. However, firms that have large, minority shareholders are more likely to adopt these provisions. The authors do not find any significant relationship between the use of these provisions and foreign ownership. Their results suggest that the decision to adopt these corporate governance provisions is influenced by large, minority shareholders in their battle for representation on the board and in managerial decisions.

This paper—a joint product of the Finance Team, Development Research Group, and the Financial Sector Operations and Policy Department—is part of a larger effort in the Bank to study corporate governance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, mail stop MC3-300, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http:/econ.worldbank.org. The authors may be contacted at lklapper@worldbank.org, llaeven@worldbank.org, or ilove@worldbank.org. (25 pages)

3601. Migration, Trade, and Foreign Direct Investment in Mexico

Patricio Aroca and William F. Maloney
(May 2005)

Part of the rationale for the North American Free Trade Agreement (NAFTA) was that it would increase trade and foreign direct investment (FDI) flows, creating jobs and reducing migration to the United States. Since poor data on illegal flows to the United States make direct measurement difficult, Aroca and Maloney instead evaluate the mechanism behind these predictions using data on migration *within* Mexico where the census data permit careful analysis. They offer the first specifications for migration within Mexico, incorporating measures of cost of living, amenities, and networks. Contrary to much of the literature, labor market variables enter very significantly and as predicted once the authors control for possible credit constraint effects. Greater exposure to FDI and trade deters out-migration with the effects working partly through the labor market. Finally, the authors generate some tentative inferences about the impact on increased FDI on Mexico-U.S. migration. On average, a doubling of FDI inflows leads to a 1.5–2 percent fall in migration.

This paper—a product of the Office of the Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to understand the impact of globalization in trade liberalization markets. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Adriana Rodriguez, room I8-012, telephone 202-473-5372, fax 202-522-7528, email address arodriguez@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. William Maloney may be contacted at wmaloney@worldbank.org. (30 pages)

3602. Teacher Shocks and Student Learning: Evidence from Zambia

Jishnu Das, Stefan Dercon,
James Habyarimana, and Pramila Krishnan
(May 2005)

A large literature examines the link between shocks to households and the educational attainment of children. The authors use new data to estimate the impact of shocks to teachers on student learning in mathematics and English. Using absenteeism in the 30 days preceding the survey as a measure of these shocks they find large impacts: A 5 percent increase in the teacher's absence rate reduces learning by 4 to 8 percent of average gains over the year. This reduction in learning achievement likely reflects both the direct effect of increased absenteeism and the indirect effects of less lesson preparation and lower teaching quality when in class. The authors document that health problems—primarily teachers' own illness and the illnesses of their family members—account for more than 60 percent of teacher absences; not surprising in a country struggling with an HIV/AIDS epidemic. The relationship between shocks to teachers and student learning suggests that households are unable to substitute adequately for teaching inputs. Excess teaching capacity that allows for the greater use of substitute teachers could lead to larger gains in student learning.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to understand the relationship between school inputs and learning achievements. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-607, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jdas@worldbank.org or jph35@georgetown.edu. (38 pages)

3603. Decentralization and Service Delivery

Junaid Ahmad, Shantayanan Devarajan,
Stuti Khemani, and Shekhar Shah
(May 2005)

Dissatisfied with centralized approaches to delivering local public services, a large number of countries are decentralizing responsibility for these services to lower-level, locally elected governments. The results have been mixed. The paper provides a framework for evaluating the benefits and costs, in terms of service delivery, of different approaches to decentralization, based on relationships of accountability between different actors in the delivery chain. Moving from a model of central provision to that of decentralization to local governments introduces a new relationship of accountability—between national and local policymakers—while altering existing relationships, such as that between citizens and elected politicians. Only by examining how these relationships change can we understand why decentralization can, and sometimes cannot, lead to better service delivery. In particular, the various instruments of decentralization—fiscal, administrative, regulatory, market, and financial—can affect the incentives facing service providers, even though they relate only to local policymakers. Likewise, and perhaps more significantly, the incentives facing local and national politicians can have a profound effect on the provision of local services. Finally, the process of implementing decentralization can be as important as the design of the system in influencing service delivery outcomes.

This paper—a joint product of the Environment and Social Sector Unit and the Office of the Regional Vice President, South Asia Region, and the Public Services Team, Development Research Group—is part of a larger effort in the Bank to improve accountability for service delivery. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-607, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at jahmad@worldbank.org, sdeverajan@worldbank.org, skhemani@worldbank.org, or sshah@worldbank.org. (27 pages)

3604. The Effect of School Type on Academic Achievement: Evidence from Indonesia

David Newhouse and Kathleen Beegle
(May 2005)

Using data from Indonesia, Newhouse and Beegle evaluate the impact of school type on academic achievement of junior secondary school students (grades 7–9). Students that graduate from public junior secondary schools, controlling for a variety of other characteristics, score 0.15 to 0.3 standard deviations higher on the national exit exam than comparable privately schooled peers. This finding is robust to OLS, fixed-effects, and instrumental variable estimation strategies. Students attending Muslim private schools, including Madrassahs, fare no worse on average than students attending secular private schools. The results provide indirect evidence that higher quality inputs at public junior secondary schools promote higher test scores.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to examine issues relating to educational outcomes. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Evelyn de Castro, room MC3-558, telephone 202-458-9121, fax 202-522-1153, email address edecastro@worldbank.org. Policy Research Working

Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted atdnewhouse@imf.org or kbeegle@worldbank.org. (49 pages)

3605. Cognitive Development among Young Children in Ecuador: The Roles of Wealth, Health, and Parenting

Christina Paxson and Norbert Schady
(May 2005)

Paxson and Schady examine the relationship between early cognitive development, socioeconomic status, child health, and parenting quality in a developing country. They use a sample of over 3,000 predominantly poor pre-school age children from Ecuador and analyze determinants of their scores on the Spanish version of the Peabody Picture Vocabulary Test (TVIP), a widely used test of language ability. The authors show that median age-normed test scores on the TVIP are much lower for older than younger children, and there is greater dispersion in scores among older children. They find that household socioeconomic characteristics, in particular wealth and parental education, are "protective"—children from wealthier households with more educated parents have higher scores. The associations of test scores with wealth and maternal education are larger for older children, suggesting that these factors have cumulative effects on cognitive ability. Last, the authors show that child health and measures of parenting quality are associated with performance on the TVIP. Children with lower hemoglobin levels perform worse on tests. Measures of parenting quality, in particular the degree to which parents are "responsive" and "harsh" toward children, and whether children are read to, account for a portion, although not the majority, of the association between socioeconomic status and cognitive development.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to evaluate the impact of programs on child cognitive development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC3-607, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at cpaxson@princeton.edu or nschady@worldbank.org. (32 pages)

3606. Measuring Microfinance Access: Building on Existing Cross-Country Data

Patrick Honohan
(May 2005)

Given the acknowledged need for a new effort to expand the set of available data on direct access to financial services, including a focus on access by those at low income, Honohan provides a selective review of the diverse sources of data that exist and considers how best to build on them. He proposes a basic framework within which to consider the analysis of the interesting questions: (1) How does access affect poverty and productivity? and (2) What hinders access? The author discusses existing and potential contribution of household and business user surveys, surveys of providers and their regulators, and surveys of experts, and assesses their relative strengths.

This paper—a product of the Financial Sector Operations and Policy Department—is part of a larger effort in the department to assess the role of access to financial services in development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC9-820, telephone 202-473-3722, fax 202-522-2031, email address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at phonohan@worldbank.org. (31 pages)

3607. Agricultural Trade Reform and the Doha Development Agenda

Kym Anderson and Will Martin
(May 2005)

Anderson and Martin examine the extent to which various regions, and the world as a whole, could gain from multilateral trade reform over the next decade. They use the World Bank's linkage model of the global economy to examine the impact first of current trade barriers and agricultural subsidies, and then of possible outcomes from the World Trade Organization's Doha round. The results suggest moving to free global merchandise trade would boost real incomes in Sub-Saharan Africa and Southeast Asia (and in Cairns Group countries) proportionately more than in other developing countries or high-income countries. Real returns to farm land and unskilled labor and real net farm incomes would rise substantially in those developing country regions, thereby alleviating poverty. A Doha partial liberalization could take the world some way toward those desirable outcomes, but more so the more agricultural subsidies are disciplined and applied tariffs are cut.

This paper—a product of the Trade Team, Development Research Group—is part of a program of World Bank research on the implications of the Doha Agenda for developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at kanderson@worldbank.org or wmartin1@worldbank.org. (38 pages)

3608. Application of Safeguards and Antidumping Duties in Colombia

Mauricio Reina and Sandra Zuluaga
(May 2005)

Colombia's experience in the use of safeguards and antidumping duties differs from international trends. On the one hand, the number of investigations conducted is substantially lower than that recorded in most of the hemisphere's large and medium-size countries. On the other hand, while there is a growing international trend of more frequent use of antidumping as opposed to safeguards, in Colombia the safeguard process has been the more used policy instrument. Although several large and medium-size firms are familiar with the application of safeguards and antidumping duties, there is still a relative unfamiliarity regarding the instruments in most of the private sector. The institutional arrangements related to the investigations and the decisionmaking processes have proven to be stable and sound. The trade liberalization process in the country has created awareness of the importance of preserving the competitiveness of production chains to strengthen their insertion in international markets, which has restrained the authorities from restricting access to intermediate goods and raw materials. The evaluation of the Colombian experience also raises concerns about the potential discretional use of these instruments. The relatively intense use of safeguards and antidumping measures in some specific periods and sectors, especially in the agricultural sector, shows that the institutional framework is not always enough to guarantee a disciplined use of the instruments.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to support trade liberalization and to make trade policy work for development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@ worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Mauricio Reina may be contacted at mareina@ cable.net.co. (43 pages)

3609. Why Governments Should Stop Non-Social Subsidies: Measuring their Consequences for Rural Latin America

Ramón López
(May 2005)

The provision of public goods and the amelioration of market failure are the classical justifications for government intervention in the economy. In reality, (1) governments intervene in markets that are not affected by failure, and (2) a large share of the government resources is spent in private goods, not in public goods. In contrast to issue 1, issue 2 has received little attention in the literature, in spite of the potentially large efficiency and equity losses arising from misguided allocations of public expenditures. López empirically documents the size of (2) in the rural sector and investigates its consequences for rural development for 10 Latin American countries over the 1985–2000 period. The econometric evidence suggests that the structure of public expenditures is an important factor of economic development in the rural sector, much greater than that of the *level* of public expenditures and of other factors on which the development literature has traditionally focused. Expanding total public expenditure in rural areas while maintaining the existing public expenditure composition prevailing in certain countries does little to promote agricultural income and reduce rural poverty. Spending a significant share of government resources in (non-social) subsidies causes less agriculture income, induces an excessive reliance of agriculture on land expansion, and reduces the income of the rural poor.

This paper—a product of the Office of the Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to understand the rural contribution to development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ruth Izquierdo, room I8-014, telephone 202-458-4161, fax 202-522-7528, email address rizquierdo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at rlopez@arec.umd.edu. (36 pages)

3610. Effects of Primary, Secondary, and Tertiary Education on Economic Growth: Evidence from Guatemala

Josef L. Loening
(May 2005)

Loening investigates the impact of human capital on economic growth in Guatemala during 1951–2002 using an error-correction methodology. The results show a better-educated labor force having a positive and significant impact on economic growth. Consistent with microeconomic studies for Guatemala, primary and secondary education are most important for productivity growth. These findings are robust while changing the conditioning set of the variables, controlling for data issues and endogeneity. Due to an environment of social and political conflict, however, total factor productivity has been slightly negative for the past decades, and there is evidence of a missing complementarity between the country's skills and its technology base. The author presents a growth-accounting framework which takes into account quality changes of physical capital, and differentiates by level of education. It shows that the human capital variables explain more than 50 percent of output growth. Of these, secondary schooling is the predominant determinant of growth.

This paper—a product of the Central America Country Management Unit, Latin America and the Caribbean Region—is part of a larger effort to understand the determinants of economic growth in the region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Caroline Guazzo, room J6-200, telephone 202-473-5725, fax 202-473-7175, email address cguazzo@ worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at jloening@ worldbank.org. (75 pages)

3611. Institutional and Policy Analysis of River Basin Management: The Brantas River Basin, East Java, Indonesia

Anjali Bhat, Kikkeri Ramu, and Karin Kemper
(May 2005)

The authors describe and analyze an unconventional approach to river basin management in a developing country undergoing rapid economic, political, and institutional change. The founding of the Brantas River Basin Management Corporation (Perum Jasa Tirta I - PJT 1), a national state-owned company for river basin management, initiated an emphasis on river basin management to operate and maintain existing infrastructure, plan and implement the allocation of water, and address problems that affect basin-level water resources. The Brantas River basin is located within the province of East Java in Indonesia. It has an area of approximately 11,800 square kilometers and makes up 25 percent of East Java's land area. The basin's population, which amounts to nearly 15 million, has increased by 53.4 percent over the past 30 years and represents 42.4 percent of East Java's population with a density of 1,249 per square kilometer. A shift has taken place in Indonesia since the mid-1990s from emphasizing infrastructure development to strengthening institutional aspects (hydrology, flood fighting, flood warning, flood management, and so on). The institutional arrangement for water resources management in the Brantas basin through a state-owned corporation is an interesting model. PJT I has achieved results in implementing a reasonably good system of water allocation and management and a reliable flood forecasting system, as well as maintaining major infrastructure in fairly good condition. Managing water quality, catchment conditions, and the river environment, however, are the responsibility of many entities, and there is need for greater coordination and authority to address these issues.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Karin Kemper may be contacted at kkemper@worldbank.org. (50 pages)

3612. Institutional and Policy Analysis of River Basin Management: The Tárcoles River Basin, Costa Rica

William Blomquist, Maureen Ballestero, Anjali Bhat, and Karin Kemper
(May 2005)

This paper describes and analyzes the effort to institute river basin management in the Tárcoles basin of Costa Rica. Located in west-central Costa Rica, the Tárcoles basin represents 4.2 percent of the nation's total land area, but is home to half the nation's population and the metropolitan area of San José, the nation's capital and largest city. Water management issues include severe water pollution resulting from sewage, industrial waste discharges, agricultural runoff, and deforestation. In the early 1990s a locally-initiated effort established a river basin commission for the Río Grande de Tárcoles (CRGT), which was supported by the central government's environment ministry. Since the late 1990s, however, the DRGT has struggled through changes of leadership, inconsistent support from the central government, and waning participation from basin stakeholders. Despite several programs to arrest deforestation and encourage better industrial and agricultural practices, the basin's water problems continue largely unabated. The Tárcoles case is instructive about both the possibilities and the fragility of efforts to establish integrated water resource management at the river basin level.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach water policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Karin Kemper may be contacted at kkemper@worldbank.org. (50 pages)

3613. Scrutinizing Public Expenditures: Assessing the Performance of Public Accounts Committees

Rick Stapenhurst, Vinod Sahgal, William Woodley , and Riccardo Pelizzo
(May 2005)

In 2002, David McGee wrote a comprehensive report on two important elements in the system of public financial accountability, namely the office of the Auditor General and the parliamentary oversight committee commonly referred to as the Public Accounts Committee (PAC). The purpose of the present paper is to deepen McGee's analysis of PACs. In particular, the authors define PAC success and identify those factors that affect PAC peformance. They use data that were collected by the World Bank Institute in 2002, when a survey questionnaire was sent to 51 national and state/provincial parliaments in Commonwealth countries in Asia and Australasia, and Canada and the United Kingdom. The authors find that the institutional factors which most account for the success of the PACs are the focus on government's financial activity rather than its policies, the power to investigate all past and present government expenses, the power to follow up on government action in response to its recommendations, and its relationship with the Auditors General.

This paper—a product of the Poverty Reduction and Economic Management Division, World Bank Institute—is part of a larger effort in the institute to strengthen parliamentary oversight in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rick Stapenhurst, room J4-111, telephone 202-473-3210, fax 202-676-9813, email address fstapenhurst@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The other authors may be contacted at vsahgal@worldbank.org, or wwoodley@worldbank.org. (36 pages)

3614. World Trade Organization Safeguards and Trade Liberalization: Lessons from the Argentine Footwear Case

Elías Baracat and Julio J. Nogués
(May 2005)

The footwear case provides an example of the complexities of World Trade Organization (WTO) rules on the use of safeguards, and of the interaction of multilateral and regional processes of liberalization. As a result both of Argentina's unilateral liberalization and the removal of barriers within Mercosur, imports of footwear increased rapidly. As Mercosur provides no intra-regional safeguard mechanism, the government of Argentina responded by applying import relief and WTO safeguards against third countries.

The WTO Dispute Settlement Body addressed these measures and as a consequence, Argentina dismantled most of them, leading to four main conclusions:

- The jurisprudence of the WTO's Appellate Body has created serious uncertainty as to when a country can use safeguards. This does not contribute to the political balance that has to be maintained when developing countries implement trade liberalization programs. In fact, it detracts from this crucial goal.
- It is an error to negotiate ambiguous multilateral agreements on the expectation that the WTO Dispute Settlement mechanism will clarify them.
- An overvalued currency heightened the industry's problems. In the case of footwear, the decline in imports following the recent devaluation was more important than that following the implementation of earlier relief measures.
- The political economy of liberalization also indicates the need for regional agreements to include adequate transition mechanisms that will facilitate adjustment to free trade and to maintain support for it.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to support trade liberalization and to make trade policy work for development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at eliasbaracat@fibertel.com.ar or jnogues@infovia.com.ar. (35 pages)

3615. Keeping Animal Spirits Asleep: The Case of Chile

Sebastián Sáez
(May 2005)

Chilean legislation is quite conservative, especially compared with international practice. However, its application has not been free of criticism, and it proved necessary to seek mechanisms that combine limitations set forth in the GATT/WTO regulations and others self-imposed by Chilean law.

Legislation on antidumping measures was introduced in Chile in 1992. The Distortions Commission has recommended and the President has adopted such measures on just six occasions, of which two correspond to extensions of existing measures. Legislation on safeguard measures was introduced in 1999. In the 1999–2002 period, seven safeguard measures were adopted. The traditional agricultural sector was the main user of the measures, and no measure was in place for more than 12 months.

The context in which the Commission was created in 1981 and the type of measures adopted by this entity support the idea that the objective of the Commission was to alleviate the political pressures generated by the difficult economic situation rather than to correct problems originated by the "price distortions of goods." In the second half of the 1980s, the Commission supported the liberalization process that started in 1985. Adopting safeguard legislation in 1999 helped to gain approval of further tariff reductions from 11 percent to 6 percent.

During the decade of the 1990s and until the present day, the philosophy of minimal use to further liberalization has been maintained. The legislation has undergone modifications to adjust the instruments used to support the economic opening and international commitments.

This paper—a product of the Trade Team, Development Research Group—is part of a larger effort in the group to understand the costs and benefits of using international agreements to facilitate and reinforce domestic trade reforms. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at sebastiansaez@tradenet.cl. (31 pages)

3616. Would Multilateral Trade Reform Benefit Sub-Saharan Africans?

Kym Anderson, Will Martin, and
Dominique van der Mensbrugghe
(June 2005)

This paper examines whether the Sub-Saharan African economies could gain from multilateral trade reform in the presence of trade preferences. The World Bank's LINKAGE model of the global economy is employed to examine the impact first of current trade barriers and agricultural subsidies, and then of possible outcomes from the WTO's Doha round. The results suggest moving to free global merchandise trade would boost real incomes in Sub-Saharan Africa proportionately more than in other developing countries or in high-income countries, despite a terms of trade loss in parts of the region. Farm employment and output, the real value of agricultural and food exports, the real returns to farm land and unskilled labor, and real net farm incomes would all rise in the region, thereby alleviating poverty. A Doha partial liberalization of both agricultural and nonagricultural trade could significantly benefit the region.

This paper—a product of the Trade Team, Development Research Group—is part of the World Bank's DfID-funded project on "Agricultural Trade Reform and the Doha Development Agenda." Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Flewitt, room MC3-333, telephone 202-473-2724, fax 202-522-1159, email address pflewitt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at kanderson@worldbank.org, 2martin1@worldbank.org, or dvandermensbrugghe@worldbank.org. (49 pages)

3617. Beyond Tariffs and Quotas: Why Don't African Manufacturers Export More?

George R. G. Clarke
(June 2005)

There has been much concern about Africa's recent export performance. Even though tariff and nontariff barriers to trade have been falling, Africa's share of world exports has declined and most African countries remain highly dependent on a narrow range of primary commodities for export earnings. Clarke looks at factors that affect the export performance of manufacturing enterprises in eight African countries. In addition to enterprise characteristics (such as size, ownership, and education of the manager), policy-related variables also affect export performance. Manufacturing enterprises are less likely to export in countries with restrictive trade and customs regulation and poor customs administration. In contrast, there is less evidence that the quality of domestic transportation infrastructure has a large impact on export performance. Although the coefficient on this variable is negative, it is statistically insignificant in most model specifications.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand the investment climate in Africa. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-300, telephone 202-473-7644, fax 202-522-1155, email address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at gclarke@worldbank.org. (32 pages)

3618. Preventing and Responding to Gender-Based Violence in Middle and Low-Income Countries: A Global Review and Analysis

Sarah Bott, Andrew Morrison, and Mary Ellsberg
(June 2005)

Worldwide, patterns of violence against women differ markedly from violence against men. For example, women are more likely than men to be sexually assaulted or killed by someone they know. The United Nations has defined violence against women as "gender-based" violence, to acknowledge that such violence is rooted in gender inequality and is often tolerated and condoned by laws, institutions, and community norms. Violence against women is not only a profound violation of human rights, but also a costly impediment to a country's national development. While gender-based violence occurs in many forms throughout the life cycle, this review focuses on two of the most common types—physical intimate partner violence and sexual violence by any perpetrator.

Unfortunately, the knowledge base about effective initiatives to prevent and respond to gender-based violence is relatively limited. Few approaches have been rigorously evaluated, even in high-income countries. And such evaluations involve numerous methodological challenges. Nonetheless, the authors review what is known about more and less effective—or at least promising—approaches to prevent and respond to gender-based violence. They present definitions, recent statistics, health consequences, costs, and risk factors of gender-based violence. The authors analyze good practice initiatives in the justice, health, and education sectors, as well as multisectoral approaches. For each of these sectors, they examine initiatives that have addressed laws and policies, institutional reforms, community mobilization, and individual behavior change strategies. Finally, the authors identify priorities for future research and action, including funding research on the health and socioeconomic costs of violence against women, encouraging science-based program evaluations, disseminating evaluation results across countries, promoting investment in effective prevention and treatment initiatives, and encouraging public-private partnerships.

This paper—a product of the Gender and Development Group, Poverty Reduction and Economic Management Network—is part of a larger effort in the network to examine the development implications of violence against women and explore how the World Bank can address this critical issue in its operational work. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Helene Carlsson, mailstop MC4-400, telephone 202-473-4822, fax 202-522-3237, email address hcarlsson@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at bott.fahey@gte.net, amorrison1@worldbank.org, or mellsberg@path-dc.org. (61 pages)

3619. State Bank Transformation in Brazil: Choices and Consequences

Thorsten Beck, Juan Miguel Crivelli, and William Summerhill
(June 2005)

Beck, Crivelli, and Summerhill analyze the different options—liquidation, federalization, privatization, and restructuring—that the Brazilian state government had for the transformation of state banks under the Programa de Incentivo á Redução do Setor Público Estadual na Atividade Bancária (PROES) in the late 1990s. Specifically, they explore the factors behind the states' choices and the effects of the transformation process on bank performance and efficiency. The authors find that states that were more dependent on federal transfers, whose banks were already under federal intervention and that established development agencies were more likely to relinquish control over their banks and transformation processes. They also find that privatized banks had improved performance, while restructured banks did not.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to understand the determinants and effects of bank privatization. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, mailstop MC3-300, telephone 202-1823, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at tbeck@worldbank.org or jcrivelli@worldbank.org. (47 pages)

3620. Leadership and the Independent Regulator

Mark A. Jamison
(June 2005)

Being a utility regulator has perils because the independence of the regulator necessarily removes power from politicians, operators, and others. Furthermore, regulators are sometimes scapegoats for unpopular policies and unavoidably become involved in shaping the policies that they are supposed to implement. As a result of such frictions, regulators are sometimes removed from office or marginalized in some way. How can regulators not only survive in such an environment, but also thrive? Jamison describes a leadership concept called adaptive leadership that regulators can use to help their countries adapt to new policies and changing situations, while allowing the regulator to stay in the game. The first leadership skill he discusses is the ability to get on the balcony to see what is really going on with operators, politicians, consumers, and others. Once this perspective is obtained, then the regulator can engage stakeholders in an adaptive process in which people make necessary changes to traditions and expectations, while hanging on to the things that are truly important. Regulators can do this by bringing attention to problems that people want to ignore because they involve difficult tradeoffs, providing certainty and stability when tensions become too high for work to be done, and keeping attention focused on the work and the issues.

This paper—a product of the Finance and Private Sector Development Division, World Bank Institute—is part of a larger effort in the institute to support infrastructure development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paul Noumba Um, room J3-145, telephone 202-473-0151, fax 202-676-9874, email address pnoumbaum@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at jamisoma@ ufl.edu. (20 pages)

3621. Assessing the Impact of the Investment Climate on Productivity Using Firm-Level Data: Methodology and the Cases of Guatemala, Honduras, and Nicaragua

Alvaro Escribano and J. Luis Guasch
(June 2005)

Developing countries are increasingly concerned about improving country competitiveness and productivity as they face the increasing pressures of globalization and attempt to improve economic growth and reduce poverty. Among such countries, investment climate assessments (ICA) have become a standard instrument for identifying key obstacles to country competitiveness and imputing their impact on productivity, in order to prioritize policy reforms for enhancing competitiveness. Given the survey objectives and the nature and limitations of the data collected, Escribano and Guasch discuss the advantages and disadvantages of using different productivity measures based on data at the firm level. Their main objective is to develop a methodology to appropriately estimate, in a robust manner, the productivity impact of the investment climate variables. To illustrate the use of this methodology, the authors apply it to the data collected for ICAs in three countries—Guatemala, Honduras, and Nicaragua. Observations in logarithms (logs) of the variables, and not in rates of growth, are pooled from all three countries. The econometric analysis is done with variables in logs to reduce the impact of measurement errors and allow inclusion of as many observations as possible since the "panel" data set is very unbalanced. The authors address the endogeneity of the production function inputs and of the investment climate variables by using a variant of the control function approach based on individual firm information, and by aggregating investment climate variables by industry and region.

The authors show that it is possible to get robust results for 10 different productivity measures, if one follows a consistent econometric methodology of specification and estimation. For policy analysis, they recommend using those results of investment climate variables on productivity that are robust for most of the productivity measures. The also analyze efficiency aspects of firms in each country. Finally, they decompose the results to obtain country-specific impacts and establish corresponding priorities for policy reform. The actual estimates for the three countries show the level of significance of the impact of investment climate variables on productivity. Variables in several categories, red tape and infrastructure in particular, appear to account for over 30 percent of productivity. The policy implications are clear: investment climate matters enormously and the relative impact of the various investment climate variables indicates where reform efforts should be directed. Given the robustness of the results, the authors argue that the econometric methodology of productivity analysis developed here ought to be used as a benchmark to assess productivity effects for other ICAs or surveys with firm-level data of similar characteristics.

This paper—a product of the Finance, Private Sector, and Infrastructure Unit, Latin America and the Caribbean Region—is part of a larger effort in the region to improve the investment climate in the region in order to facilitate growth and reduce poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jocelyn Troncoso, room I5-118, telephone 202-473-7826, fax 202-522-2106, email address jtroncoso@ worldbank.org. Policy Research Working Papers are also posted on the Web at http:/ /econ.worldbank.org. Luis Guasch may be contacted at jguasch@worldbank.org. (98 pages)

3622. Trade Policy, Income Risk, and Welfare

Tom Krebs, Pravin Krishna, and William Maloney
(June 2005)

This paper studies empirically the relationship between trade policy and individual income risk faced by workers, and uses the estimates of this empirical analysis to evaluate the welfare effect of trade reform. The analysis proceeds in three steps. First, longitudinal data on workers are used to estimate time-varying individual income risk parameters in various manufacturing sectors. Second, the estimated income risk parameters and data on trade barriers are used to analyze the relationship between trade policy and income risk. Finally, a simple dynamic incomplete-market model is used to assess the corresponding welfare costs.

In the implementation of this methodology using Mexican data, the paper finds that trade policy changes have a significant short run effect on income risk. Further, while the tariff level has an insignificant mean effect, it nevertheless changes the degree to which macroeconomic shocks affect income risk.

This paper—a product of the Office of the Regional Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to understand the welfare impacts of trade liberalization. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Adriana Rodriguez, mailstop I8-801, telephone 202-473-5372, fax 202-522-7528, email address arodriguez3@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at pravin_krishna@jhu.edu or wmaloney@ worldbank.org. (50 pages)

3623. The Impact of Regulation on Growth and Informality: Cross-Country Evidence

Norman V. Loayza, Ana María Oviedo, and Luis Servén
(June 2005)

Loayza, Oviedo, and Servén study the effects of regulation on economic growth and the relative size of the informal sector in a large sample of industrial and developing countries. Along with firm dynamics, informality is an important channel through which regulation affects macroeconomic performance and economic growth in particular. The authors conclude that a heavier regulatory burden—particularly in product and labor markets—reduces growth and induces informality. These effects are, however, mitigated as the overall institutional framework improves.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to understand the process of economic reform. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tourya Tourougui, mail stop MC3-301, telephone 202-458-7431, fax 202-522-3518, email address ttourougui@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at nloayza@worldbank.org or lserven@worldbank.org. (20 pages)

3624. Pesticide Poisoning of Farm Workers: Implications of Blood Test Results from Vietnam

Susmita Dasgupta, Craig Meisner, David Wheeler, Nhan Thi Lam, and Khuc Xuyen
(June 2005)

In this paper, the authors have assessed the incidence and determinants of pesticide poisoning among rice farmers in Vietnam's Mekong Delta. Blood cholinesterase tests suggest that the incidence of poisoning from exposure to organophosphates and carbamates is quite high in Vietnam. Using the medical test results as benchmarks, the authors find that farmers' self-reported symptoms have very weak associations with actual poisoning.

Regression analysis of blood tests reveals a lower incidence of poisoning for farmers who avoid the most toxic pesticides and use protective items. The authors also find very large provincial differences in poisoning incidence after they control for individual factors. The results highlight the potential importance of negative externalities, and suggest that future research on pesticide-related damage should include information on local water, air, and soil contamination.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to understand health effects of chemical use in agriculture. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yasmin D'Souza, room MC2-622, telephone 202-473-1449, fax 202-522-3230, email address ydsouza@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at sdasgupta@worldbank.org, cmeisner@worldbank.org, or dwheeler1@worldbank.org. June 2005. (14 pages)

3625. Evaluating Anti-Poverty Programs

Martin Ravallion
(June 2005)

Ravallion critically reviews the methods available for the *ex-post* counterfactual analysis of programs that are assigned exclusively to individuals, households, or locations. The discussion covers both experimental and non-experimental methods (including propensity-score matching, discontinuity designs, double and triple differences, and instrumental variables). Two main lessons emerge. First, despite the claims of advocates, no single method dominates; rigorous, policy-relevant evaluations should be open-minded about methodology. Second, future efforts to draw more useful lessons from evaluations will call for more policy-relevant measures and deeper explanations of measured impacts than are possible from the classic ("black box") assessment of mean impact.

This paper—a product of the Poverty Team, Development Research Group—was prepared for the *Handbook of Agricultural Economics Volume 4*, North-Holland, edited by Robert E. Evenson and T. Paul Schultz. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1151, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mravallion@worldbank.org. (74 pages)

3626. Global Monetary Conditions versus Country-Specific Factors in the Determination of Emerging Market Debt Spreads

Mansoor Dailami, Paul R. Masson, and Jean Jose Padou
(June 2005)

Dailami, Masson, and Padou offer evidence that U.S. interest rate policy has an important influence in the determination of credit spreads on emerging market bonds over U.S. benchmark treasuries and therefore on their cost of capital. Their analysis improves on the existing literature and understanding by addressing the dynamics of market expectations in shaping views on interest rate and monetary policy changes and by recognizing nonlinearities in the link between U.S. interest rates and emerging market bond spreads, as the level of interest rates affect the market's perceived probability of default and the solvency of emerging market borrowers. For a country with a moderate level of debt, repayment prospects would remain good in the face of an increase in U.S. interest rates, so there would be little increase in spreads. A country close to the borderline of solvency would face a steeper increase in spreads. Simulations of a 200 basis points (bps) increase in U.S. interest rates show an increase in emerging market spreads ranging from 6 bps to 65 bps, depending on debt/GDP ratios. This would be in addition to the increase in the benchmark U.S. 10 year Treasury rate.

This paper—a product of the Development Prospects Group—is part of a larger effort in the group to analyze global financial linkages. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Gamboa, room MC4-376, telephone 202-473-4847, fax 202-522-

3277, email address mgamboa@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Mansoor Dailami may be contacted at mdailami@worldbank.org. (30 pages)

3627. Reforming the Posts: Abandoning the Monopoly-Supported Postal Universal Service Obligation in Developing Countries

Charles Kenny
(June 2005)

The monopoly-supported universal service obligation (USO) is usually defended on the grounds that the monopoly allows for cross-subsidy in letter services that in turn allows universal access to a service of great importance to all. Kenny argues that letter delivery (as opposed to other services that may be provided by post offices) is not in universal demand in poor countries, that the size of the market in developing countries is such that USOs could not be met under the monopoly model, and that the monopoly carries heavy costs for sector development and consumer welfare. He proposes in the place of the postal USO a competitive approach involving universal access to a range of services that poor people have a need to access. Regarding reform of the incumbent, the author takes a preliminary first cut at examining the statistical relationship between postal performance (as measured by letters per capita allowing for income per capita), trust in the postal service, and postal efficiency, and finds a significant link between the three. The results suggest that reforms that improve postal efficiency and trust in the postal network will improve the performance of the postal network. The author suggests that there may be better uses of cross-subsidy from within the sector and government subsidy from without than supporting the inefficient delivery of a service rarely used by poor people.

This paper—a product of the Strategy Unit, Global Information and Communications Technologies—is part of a larger effort to examine issues of postal reform. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marta Prittis, room F5K-222, telephone 202-473-0975, fax 202-522-3001, email address mprittis@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at ckenny@worldbank.org. (22 pages)

3628. Deposit Insurance around the World: A Comprehensive Database

Asli Demirgüç-Kunt, Baybars Karacaovali, and Luc Laeven
(June 2005)

This paper updates the Demirgüç-Kunt and Sobaci (2001) cross-country deposit insurance database and extends it in several important dimensions. This new data set identifies both recent adopters and the ones that were not covered earlier due to a lack of data. Moreover, for the first time, it provides historical time series for several variables and adds new ones. The data were collected by surveying deposit insurance institutions and related agencies as well as through the use of various other country sources.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to understand and characterize the design and implementation of deposit insurance around the world. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-439, telephone 202-473-1823, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ademirguckunt@worldbank.org or llaeven@worldbank.org. (80 pages)

3629. Fiscal Space for Investment in Infrastructure in Colombia

Rodrigo Suescún
(June 2005)

For the evaluation of macroeconomic policies Colombian authorities rely heavily, if not exclusively, on the operational framework known as the Financial Programming Model developed by the International Monetary Fund in the 1950s. Based on this static framework, the formulation of fiscal policy in the country, just as in various Latin American countries, focuses primarily on fiscal deficit and gross debt targets. However, the type of fiscal policy advice derived from it is not useful for understanding the asset-creating nature and the intertemporal tradeoffs involved in public investment decisions. Suescún develops a perfect foresight, dynamic small open economy model to provide an alternative framework for fiscal analysis and policy purposes. He shows that the two competing frameworks deliver differing paths for the expected behavior of the Colombian economy. He then uses the proposed framework to study the likely consequences of using public capital spending to achieve deficit targets since, in addition to an already high public debt, in the years ahead unfunded pension obligations will put enormous pressure on the Colombian government's solvency. The results indicate that public capital compression is costly in terms of foregone growth and very ineffective in achieving fiscal consolidation. The adoption of fiscal rules such as the golden rule or the permanent balance rule to shield public investment from undue budgetary pressures makes little sense in the presence of sustainability concerns. The author shows that a transitory capital spending increase is not self-amortizing in the long run; hence an extra peso of public capital spending deteriorates the intertemporal fiscal position. A permanent increase largely pays for itself in terms of additional tax revenue but this effect is offset by a deterioration of infrastructure user charges, as long as public prices are determined competitively.

This paper is a product of the Office of Regional Chief Economist, Latin America and the Caribbean Region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ruth Izquierdo, room I8-014, telephone 202-458-4161, fax 202-522-7528, email address rizquierdo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at rsuescun@worldbank.org. (54 pages)

3630. Governance Matters IV: Governance Indicators for 1996–2004

Daniel Kaufmann, Aart Kraay,
and Massimo Mastruzzi
(June 2005)

Kaufmann, Kraay, and Mastruzzi present the latest update of their aggregate governance indicators, together with new analysis of several issues related to the use of these measures. The governance indicators measure the following six dimensions of governance: (1) voice and accountability; (2) political instability and violence; (3) government effectiveness; (4) regulatory quality; (5) rule of law, and (6) control of corruption. They cover 209 countries and territories for 1996, 1998, 2000, 2002, and 2004. They are based on several hundred individual variables measuring perceptions of governance, drawn from 37 separate data sources constructed by 31 organizations. The authors present estimates of the six dimensions of governance for each period, as well as margins of error capturing the range of likely values for each country. These margins of error are not unique to perceptions-based measures of governance, but are an important feature of all efforts to measure governance, including objective indicators. In fact, the authors give examples of how individual objective measures provide an incomplete picture of even the quite particular dimensions of governance that they are intended to measure.

The authors also analyze in detail changes over time in their estimates of governance; provide a framework for assessing the statistical significance of changes in governance; and suggest a simple rule of thumb for identifying statistically significant changes in country governance over time. The ability to identify significant changes in governance over time is much higher for aggregate indicators than for any individual indicator. While the authors find that the quality of governance in a number of countries has changed significantly (in both directions), they also provide evidence suggesting that there are no trends, for better or worse, in global averages of governance. Finally, they interpret the strong observed correlation between income and governance, and argue against recent efforts to apply a discount to governance performance in low-income countries.

This paper—a joint product of the Global Programs Division, World Bank Institute, and the Growth and Investment Team, Development Research Group—is part of a larger effort in the Bank to study governance issues. The data, as well as a Web-based graphical interface, are available at www.worldbank.org/wbi/governance/govdata/. The appendices and a synthesis of the paper are available at www.worldbank.org/wbi/governance/pubs/govmatters4.html. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rina Bonfield, room MC3-354, telephone 202-473-1248, fax 202-522-3518, email address abonfield@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at dkaufmann@worldbank.org, akraay@worldbank.org, mmastruzzi@worldbank.org. (133 pages)

3631. Poverty Traps, Aid, and Growth

Aart Kraay and Claudio Raddatz
(June 2005)

Kraay and Raddatz examine the empirical evidence in support of the poverty trap view of underdevelopment. They calibrate simple aggregate growth models in which poverty traps can arise due to either low saving or low technology at low levels of development. They then use these models to assess the empirical relevance of poverty traps and their consequences for policy. The authors find little evidence of the existence of poverty traps based on these two broad mechanisms. When put to the task of explaining the persistence of low income in African countries, the models require either unreasonable values for key parameters, or else generate counterfactual predictions regarding the relations between key variables. These results call into question the view that a large scaling-up of aid to the poorest countries is a necessary condition for sharp and sustained increases in growth.

This paper—a product of the Growth and Investment Team, Development Research Group—is part of a larger effort in the group to study growth and poverty reduction. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rina Bonfield, room MC3-354, telephone 202-473-1248, fax 202-522-3518, email address abonfield@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at akraay@worldbank.org or craddatz@worldbank.org. (49 pages)

3632. Corporate Governance and Bank Performance: A Joint Analysis of the Static, Selection, and Dynamic Effects of Domestic, Foreign, and State Ownership

Allen N. Berger, George R. G. Clarke,
Robert Cull, Leora Klapper, and
Gregory F. Udell
(June 2005)

The authors jointly analyze the static, selection, and dynamic effects of domestic, foreign, and state ownership on bank performance. They argue that it is important to include indicators of all the relevant governance effects in the same model. "Nonrobustness" checks (which purposely exclude some indicators) support this argument. Using data from Argentina in the 1990s, their strongest and most robust results concern state ownership. State-owned banks have poor long-term performance (static effect), those undergoing privatization had particularly poor performance beforehand (selection effect), and these banks dramatically improved following privatization (dynamic effect. However, much of the measured improvement is likely due to placing nonperforming loans into residual entities, leaving "good" privatized banks.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to study the effects of ownership change in the banking sectors of developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mani Jandu, room MC3-456, telephone 202-473-3103, fax 202-522-1155, email address mjandu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at aberger@frb.gov, gclarke@worldbank.org, rcull@worldbank.org, or lklapper@worldbank.org. (41 pages)

3633. Investment and Saving in China

Louis Kuijs
(June 2005)

Kuijs analyzes sectoral patterns of investment and saving in China—over time and compared with other countries—to shed light on the factors driving high investment and on how saving is channeled into investment. The findings inform several policy debates. Key findings include: (1) investment by enterprises distinguishes China from other countries and explains most of the variation over time; (2) high household saving explains only a part of the large difference in national saving between China and other countries—the majority is explained by high saving of the government and enterprises (through retained earnings); and (3) only about one-third of enterprise investment is financed via the financial sector, a lower share than in the early 1990s. The author also explores explanations behind high saving of the government and enterprises. His findings have three sets of policy implications. First, the identified financing patterns put in perspective the exposure of the financial sector to investment-related risks but, against a background of concerns about suboptimal allocation of capital, bring to the fore corporate governance, dividend policy, and transparency and accountability of public funds. Second, the findings suggest policy adjustments that would help in achieving the government's goals of improving the quality of growth and increasing the role of consumption. Third, long term saving prospects and the impact of financial sector and pension policies are discussed.

This paper—a product of the Poverty Reduction and Economic Management Sector Department, East Asia and Pacific Region—is part of a larger effort in the Bank to study the factors behind China's economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Doris Chung, mailstop MC 8-808, telephone 202-458-0379, fax 202-522-1557, email address dchung@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at akuijs@worldbank.org. (19 pages)

3634. Quantifying the Rural-Urban Gradient in Latin America and the Caribbean

Kenneth M. Chomitz, Piet Buys, and Timothy S. Thomas
(June 2005)

This paper addresses the deceptively simple question: What is the rural population of Latin America and the Caribbean (LAC)? It argues that rurality is a gradient, not a dichotomy, and nominates two dimensions to that gradient: population density and remoteness from large metropolitan areas. It uses geographically referenced population data (from the Gridded Population of the World, version 3) to tabulate the distribution of populations in Latin America and in individual countries by population density and by remoteness. It finds that the popular perception of Latin America as a 75 percent urban continent is misleading. Official census criteria, though inconsistent between countries, tend to classify as "urban" small settlements of less than 2,000 people. Many of these settlements are however embedded in an agriculturally based countryside. The paper finds that about 13 percent of Latin America populations live at ultra-low densities of less than 20 per square kilometer. Essentially these people are more than an hour's distance from a large city, and more than half live more than four hours' distance. A quarter of the population of Latin America is estimated to live at densities below 50, again essentially all of them more than an hour's distance from a large city. Almost half (46 pecent) of Latin America live at population densities below 150 (a conventional threshold for urban areas), and more than 90 percent of this group is at least an hour's distance from a city; about one-third of them (18 percent of the total) are more than four hours distance from a large city.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to understand spatial aspects of development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yasmin D'Souza, mail stop MC2-2-5, telephone 202-473-1449, fax 202-522-3230, email address ydsouza@worldbank.org. The printed version of this paper contains black and white maps and graphs. Those figures are best viewed in the PDF version of this paper, downloadable at http://econ.worldbank.org. Kenneth Chomitz may be contacted at kchomitz@worldbank.org. (35 pages)

3635. The Role of Tropical Forests in Supporting Biodiversity and Hydrological Integrity: A Synoptic Overview

Ellen M. Douglas, Kate Sebastian, Charles J. Vörösmarty, Stanley Wood, and Kenneth M. Chomitz
(June 2005)

Conservation of high-biodiversity tropical forests is sometimes justified on the basis of assumed hydrological benefits—in particular, the reduction of flooding hazards for downstream floodplain populations. However, the "far-field" link between deforestation and distant flooding has been difficult to demonstrate empirically. This simulation study assesses the relationship between forest cover and hydrology for all river basins intersecting the world's tropical forest biomes. The study develops a consistent set of pan-tropical land cover maps gridded at one-half degree latitude and longitude. It integrates these data with existing global biogeophysical data. The study applies the Water Balance Model—a coarse-scale process-based hydrological model—to assess the impact of land cover changes on runoff. It quantifies the impacts of forest conversion on biodiversity and hydrology for two scenarios—historical forest conversion and the potential future conversion of the most threatened remaining tropical forests. A worst-case scenario of complete conversion of the most threatened of the remaining forested areas would mean the loss of another three million km^2 of tropical forests. Increased annual yield from the conversion of threatened tropical forests would be less than 5 percent of contemporary yield in aggregate. However, about 100 million people—80 million of them in floodplains—would experience increases of more than 25 percent in annual water flows. This might be associated with commensurate increases in peak flows, though further analysis would be necessary to gauge the impact on flooding. The study highlights basins in Southeast Asia, southern China, and Latin America that warrant further study.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to understand the causes and consequences of deforestation. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Yasmin D'Souza, mail stop MC2-205, telephone 202-473-1449, fax 202-522-3230, email address ydsouza@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ellen.douglas@unh.edu or kchomitz@worldbank.org. (22 pages)

3636. Comparison of Institutional Arrangements for River Basin Management in Eight Basins

William Blomquist, Ariel Dinar, and Karin Kemper
(June 2005)

This study represents an effort toward understanding conditions that affect successful or unsuccessful efforts to devolve water resource management to the river basin level and secure active stakeholder involvement. A theoretical framework is used to identify potentially important variables related to the likelihood of success. Using a comparative case-study approach, the study examined river basins where organizations have been developed at the basin scale and where organizations perform management functions such as planning, allocation, and pricing of water supplies, flood prevention and response, and water quality monitoring and improvement. This paper compares the alternative approaches to basin governance and management adopted in the following river basins: the Alto-Tietê and Jaguaribe River Basins, Brazil; the Brantas River Basin, East Java, Indonesia; the Fraser River Basin, British Columbia, Canada; the Guadalquivir Basin, Spain; the Murray-Darling River Basin, Australia; the Tárcoles River Basin, Costa Rica; and the Warta River Basin, Poland. The analysis focuses on how management has been organized and pursued in each case in light of its specific geographical, historical, and organizational contexts and the evolution of institutional arrangements. The cases are also compared and assessed for their observed degrees of success in achieving improved stakeholder participation and integrated water resources management.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at adinar@worldbank.org or kkemper@worldbank.org. (46 pages)

3637. Decentralization of River Basin Management: A Global Analysis

Ariel Dinar, Karin Kemper, William Blomquist, Michele Diez, Gisèle Sine, and William Fru
(June 2005)

Decentralization and increased stakeholder involvement have been major elements of water sector reform as ways to promote sustainable and integrated resource management particularly of river basins. Based on an analytical framework for relating decentralization and stakeholder involvement to improved river basin management, this paper infers several hypotheses about factors associated with greater or lesser likelihood of success of the decentralization process using data from 83 river basins worldwide. The results suggest that physical, political, economic, financial, and institutional characteristics of the basin do affect the process and the level of performance of the decentralization. In particular, the presence of water scarcity may be a stimulus to reform, uniting the stakeholders in the basin and leading to better performance; organized user groups push for the initiation of decentralization reforms but may be associated with costs to the process and difficulty of achieving decentralization; the existence of dispute resolution mechanisms supports stakeholder involvement and improves decentralization performance; where stakeholders accepted greater financial responsibility, complying with tariffs and contributing to the budget for basin management, the decentralization process and performance measures increased; basins with higher percentages of their budgets from external governmental sources benefited from better stability and support and it shows in the performance of the decentralization process.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at adinar@worldbank.org or kkemper@worldbank.org. (36 pages)

3638. Workers' Remittances to Developing Countries: A Survey with Central Banks on Selected Public Policy Issues

José de Luna Martínez
(June 2005)

This paper presents the findings of a survey conducted by the World Bank of central banks in 40 developing countries across different regions in the world. The survey focused on the following topics: (1) coverage of national statistics on remittances, (2) cost of transferring and delivering remittances, (3) regulatory regime for remittance transactions, and (4) efforts of developing countries to channel remittance flows through formal financial institutions. The study finds that in most countries existing data do not reflect the full amount of remittance inflows that they receive every year. Coverage of instruments and financial institutions through which remittances take place is limited. Moreover, only a few countries measure remittances that take place through informal channels. It also finds that the scope of financial authorities in developing countries to reduce remittance fees is limited because a large part of the fees charged to customers are set by financial institutions located in the countries where transactions originate. Cooperation between sending and recipient countries is needed to reduce remittance costs. The survey finds that in several countries money transfer companies are not properly supervised. Given the increasing international concerns with money laundering and terrorism financing issues, it is important that basic registration and reporting requirements are introduced for money transfer companies. Registration and reporting requirements should be designed in such a way that they do not deter the further development of this type of financial institution. Finally, the survey finds that most countries need to establish better mechanisms that would allow them to maximize the developmental effect of remittance inflows. By establishing new savings and investment instruments for remittance recipient households, a larger part of remittance flows might be channeled to finance productive investments, thus fostering economic growth.

This paper—a product of the Financial Sector Operations and Policy Department—is part of a larger effort in the department to better understand the developmental impact of remittances in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Susana Coca, room MC9-210, telephone 202-473-7474, fax 202-522-3199, email address scoca@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at jdelunamartinez@worldbank.org. (43 pages)

3639. Finances of Egyptian Listed Firms

Inessa Love
(June 2005)

The author presents an analysis of the finances of Egyptian listed companies evaluating recent trends in growth and profitability during the 1995–2001 period. The data from financial statements reveal the effect of the economic slowing of the past few years, especially in the construction and real estate sectors and especially in smaller companies. She finds that smaller firms appear to be less profitable and experience lower growth, likely because of being particularly adversely affected by many of the sources of the high costs of doing business in Egypt. While the Egyptian firms are not very highly leveraged on average, she finds that smaller firms have significantly less access to bank finance than larger firms do. This confirms the widely held view that there is a need to improve the availability of credit for small enterprises.

This paper—a product of the Finance Team, Development Research Group—is part of a larger effort in the group to study access to finance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-439, telephone 202-473-1823, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at ilove@worldbank.org. (26 pages)

3640. Is a Guaranteed Living Wage a Good Anti-Poverty Policy?

Rinku Murgai and Martin Ravallion
(June 2005)

Minimum wages are generally thought to be unenforceable in developing rural economies. But there is one solution—a workfare scheme in which the government acts as the employer of last resort. Is this a cost-effective policy against poverty? Using a microeconometric model of the casual labor market in rural India, Murgai and Ravallion find that a guaranteed wage rate sufficient for a typical poor family to reach the poverty line would bring the annual poverty rate down from 34 percent to 25 percent at a fiscal cost representing 3–4 percent of GDP when run for the whole year. Confining the scheme to the lean season (three months) would bring the annual poverty rate down to 31 percent at a cost of 1.3 percent of GDP. While the gains from a guaranteed wage rate would be better targeted than a uniform (untargeted) cash transfer, the extra costs of the wage policy imply that it would have less impact on poverty.

This paper—a product of the Poverty Team, Development Research Group—is part of a larger effort in the group to provide ex ante evaluations of proposed anti-poverty programs. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-551, telephone 202-473-3902, fax 202-522-1151, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Martin Ravallion may be contacted at mravallion@worldbank.org. (40 pages)

3641. Applications of Negotiation Theory to Water Issues

Carlo Carraro, Carmen Marchiori, and Alessandra Sgobbi
(June 2005)

The authors review the applications of noncooperative bargaining theory to water related issues—which fall in the category of formal models of negotiation. They aim to identify the conditions under which agreements are likely to emerge and their characteristics, to support policymakers in devising the "rules of the game" that could help obtain a desired result. Despite the fact that allocation of natural resources, especially trans-boundary allocation, has all the characteristics of a negotiation problem, there are not many applications of formal negotiation theory to the issue. Therefore, the authors first discuss the noncooperative bargaining models applied to water allocation problems found in the literature. Key findings include the important role noncooperative negotiations can play in cases where binding agreements cannot be signed; the value added of politically and socially acceptable compromises; and the need for a negotiated model that considers incomplete information over the negotiated resource.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to mainstream negotiation theory. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-604, telephone 202-473-3716, email address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ccarraro@unive.it, c.marchiori@lse.ac.uk or alessandra.sgobbi@feem.it. (45 pages)

3642. Advances in Negotiation Theory: Bargaining, Coalitions, and Fairness

Carlo Carraro, Carmen Marchiori, and Alessandra Sgobbi
(June 2005)

Bargaining is ubiquitous in real life. It is a major dimension of political and business activities. It appears at the international level, when governments negotiate on matters ranging from economic issues (such as the removal of trade barriers), to global security (such as fighting against terrorism) to environmental and related issues (such as climate change control). What factors determine the outcomes of such negotiations? What strategies can help reach an agreement? How should the parties involved divide the gains from cooperation? With whom will one make alliances? The authors address these questions by focusing on a noncooperative approach to negotiations, which is particularly relevant for the study of international negotiations. By reviewing noncooperative bargaining theory, noncooperative coalition theory, and the theory of fair division, they try to identify the connections among these different facets of the same problem in an attempt to facilitate progress toward a unified framework.

This paper—a product of the Infrastructure and Environment Team, Development Research Group—is part of a larger effort in the group to mainstream negotiation theory. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-604, telephone 202-473-3716, email address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at ccarraro@unive.it, c.marchiori@lse.ac.uk or alessandra.sgobbi@feem.it. (53 pages)

3643. A "Research" Database on Infrastructure Economic Performance

Antonio Estache and Ana Goicoechea
(June 2005)

Estache and Goicoechea present an infrastructure database that was assembled from multiple sources. Its main purposes are: (1) to provide a snapshot of the sector as of the end of 2004; and (2) to facilitate quantitative analytical research on infrastructure. The paper includes definitions, source information, and the most recent data available for 37 performance indicators that proxy access, affordability, and quality of service. Additionally, the database includes a snapshot of 15 reform indicators across infrastructure sectors.

This paper—a product of the Office of the Vice President, Infrastructure Network—is part of a larger effort in the network to provide tools for research in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ana Goicoechea, room H3-182, telephone 202-473-5855, fax 202-522-3738, email address agoicoechea@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Antonio Estache may be contacted at aestache@worldbank.org. (150 pages)

3644. The Economic Consequences of Health Shocks

Adam Wagstaff
(June 2005)

While there is a great deal of anecdotal evidence on the economic effects of adverse health shocks, there is relatively little hard empirical evidence. Wagstaff builds on recent empirical work to explore in the context of postreform Vietnam two related issues: (1) how far household income and medical care spending responds to health shocks, and (2) how far household consumption is protected against health shocks. The results suggest that adverse health shocks—captured by negative changes in body mass index (BMI)—are associated with reductions in earned income. This appears to be only partly—if at all—due to a reverse feedback from income changes to BMI changes. By contrast, there is a hint—the relevant coefficient is not significant—that adverse BMI shocks may result in increases in unearned income. This may reflect additional gifts, remittances, and so on, from family and friends following the health shock. Medical spending is found to increase following an adverse health shock, but not among those with health insurance. The impact for the uninsured is large, equal in absolute size to the income loss associated with a BMI shock. The lack of impact for the insured points to complete insurance against the medical care costs associated with health shocks, and is consistent with the very generous coverage of Vietnam's health insurance program in this period. The question arises: have Vietnamese households been able to hold their food and nonfood consumption constant in the face of these income reductions and extra medical care outlays? The results suggest not. For the sample as a whole, both food and nonfood consumption are found to be responsive to health shocks, indicating an inability to smooth nonmedical consumption in the face of health shocks. Further analysis reveals some interesting differences across different groups within the sample. Households with insurance come no closer to smoothing nonmedical consumption than uninsured households. Furthermore, and somewhat counterintuitively, better-off households—including insured households—fare worse than poorer households in smoothing their nonmedical consumption in the face of health shocks, despite the fact that in the case of insured households there are no medical bills associated with an adverse health event. Why the poor rely on dissaving and borrowing to such an extent, and do not apparently reduce their food and nonfood consumption following an adverse health shock while the better-off do, may be because the levels of food and nonfood consumption of the poor are simply too low relative to basic needs to enable them to cut back in the face of an adverse BMI shock.

This paper—a product of the Public Services Team, Development Research Group—is part of a larger effort in the group to understand how different institutional arrangements fare in terms of protecting people from health risks. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, mail stop MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at awagstaff@worldbank.org. (18 pages)

3645. Efficiency of Public Spending in Developing Countries: An Efficiency Frontier Approach

Santiago Herrera and Gaobo Pang
(June 2005)

Government spending in developing countries typically account for between 15 and 30 percent of GDP. Hence, small changes in the efficiency of public spending could have a major impact on GDP and on the attainment of the government's objectives. The first challenge that stakeholders face is measuring efficiency. This paper attempts such quantification and has two major parts. The first part estimates efficiency as the distance between observed input-output combinations and an efficiency frontier (defined as the maximum attainable output for a given level of inputs). This frontier is estimated for several health and education output indicators by means of the Free Disposable Hull (FDH) and Data Envelopment Analysis (DEA) techniques. Both input-inefficiency (excess input consumption to achieve a level of output) and output-inefficiency (output shortfall for a given level of inputs) are scored in a sample of 140 countries using data from 1996 to 2002. The second part of the paper seeks to verify empirical regularities of the cross-country variation in efficiency. Results show that countries with higher expenditure levels register lower efficiency scores, as well as countries where the wage bill is a larger share of the government's budget. Similarly, countries with higher ratios of public to private financing of the service provision score lower efficiency, as do countries plagued by the HIV/AIDS epidemic and those with higher income inequality. Countries with higher aid-dependency ratios also tend to score lower in efficiency, probably due to the volatility of this type of funding that impedes medium term planning and budgeting. Though no causality may be inferred from this exercise, it points at different factors to understand why some countries might need more resources than others to achieve similar educational and health outcomes.

This paper—a product of the Economic Policy and Debt Department, Poverty Reduction and Economic Management Network—is part of a larger effort in the network to examine the role of public expenditure in the growth process and present analytical tools that country economists can use in their work. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sarah Lipscomb, room MC4-424, telephone 202-473-3718, email address slipscomb@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at sherrera@worldbank.org or gpang@worldbank.org. (67 pages)

3646. Scaling-Up Microfinance for India's Rural Poor

Priya Basu and Pradeep Srivastava
(June 2005)

This paper reviews the current level and pattern of access to finance for India's rural poor and examines some of the key microfinance approaches in India, taking a close look at the most dominant among these, the *Self Help Group (SHG) Bank Linkage* initiative. It empirically analyzes the success with which SHG Bank Linkage has been able to reach the poor, examines the reasons behind this, and the lessons learned. The analysis draws heavily on a recent rural access to finance survey of 6,000 households in India undertaken by the authors. The main findings and implications of the paper are as follows: India's rural poor currently have very little access to finance from formal sources. Microfinance approaches have tried to fill the gap. Among these, the growth of SHG Bank Linkage has been particularly remarkable, but outreach remains modest in terms of the proportion of poor households served. The paper recommends that, if SHG Bank Linkage is to be scaled-up to offer mass access to finance for the rural poor, then more attention will need to be paid toward the promotion of high quality SHGs that are sustainable, clear targeting of clients, and ensuring that banks linked to SHGs price loans at cost-covering levels. At the same time, the paper argues that, in an economy as vast and varied as India's, there is scope for diverse microfinance approaches to coexist. Private sector microfinanciers need to acquire greater professionalism, and the government can help by creating a flexible architecture for microfinance innovations, including through a more enabling policy, legal, and regulatory framework. Finally, the paper argues that, while microfinance can, at minimum, serve as a quick way to deliver finance to the poor, the medium-term strategy to scale-up access to finance for the poor should be to "graduate" microfinance clients to formal financial institutions. The paper offers some suggestions on what it would take to reform these institutions with an eye to improving access for the poor.

This paper—a product of the Finance and Private Sector Development Unit, South Asia Region—is part of a larger effort in the region to measure access to finance, understand what constrains access, and suggest ways to improve access to finance for the poor and others who are underserved. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Espiritu, room MC10-122, telephone 202-458-7755, fax 202-522-1145, email address mespiritu@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. Priya Basu may be contacted at pbasu@worldbank.org. (32 pages)

3647. Improving Child Nutrition Outcomes in India: Can the Integrated Child Development Services Be More Effective?

Monica Das Gupta , Michael Lokshin , Michele Gragnolati , and Oleksiy Ivaschenko
(June 2005)

Levels of child malnutrition in India fell only slowly during the 1990s, despite significant economic growth and large public spending on the Integrated Child Development Services (ICDS) program, of which the major component is supplementary feeding for malnourished children. To unravel this puzzle, the authors assess the program's placement and its outcomes using National Family Health Survey data from 1992 and 1998. They find that program placement is clearly regressive across states. The states with the greatest need for the program—the poor northern states with high levels of child malnutrition and nearly half of India's population—have the lowest program coverage and the lowest budgetary allocations from the central government. Program placement within a state is more progressive: poorer and larger villages have a higher probability of having an ICDS center, as do those with other development programs or community associations. The authors also find little evidence of program impact on child nutrition status in villages with ICDS centers.

This paper is a product of the Public Services Team and the Poverty Team, Development Research Group. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, mail stop MC3-311, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at mdasgupta@worldbank.org, mlokshin@worldbank.org, mgragnolati@worldbank.org, or oivaschenko@worldbank.org. (27 pages)

3648. Insurance and Liquidity: Panel Evidence

Rashmi Shankar
(June 2005)

Shankar presents evidence that balance sheet effects are critical determinants of both the likelihood of a crisis and of income losses following a crisis. She tests the validity of "insurance" and "liquidity" models of currency crisis. Both models predict that the occurrence of a balance of payments crisis is conditional on the health of the nation's accounts in relation to the rest of the world. Problems in the balance sheet either cause a financial crisis that develops into a run on the central bank, or generate a run on the central bank once contingent liabilities exceed reserves and the yield differential moves against domestic assets. Estimations of crisis likelihoods based on several specifications of single and simultaneous equation probit models confirm that output losses following the crisis are persistent and conditional on the balance sheet indicator, that is, the ratio of the stock of gross external liabilities to assets. Measures of contingent liabilities, capital flight, and financial depth perform well as crisis predictors, and the marginal effects on the probability of a crisis are of the expected sign. The panel data set covers the time period 1973 through 2003 for 90 countries.

This paper—a product of the Office of the Regional Chief Economist, Latin America and the Caribbean Region—is part of a larger effort in the region to arrive at a deeper understanding of the sources of macroeconomic volatility and their impact on growth and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Ruth Izquierdo, room I8-014, telephone 202-458-4161, fax 202-522-7528, email address rizquierdo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at rashmi@brandeis.edu. (32 pages)

3649. Institutional and Policy Analysis of River Basin Management: The Jaguaribe River Basin, Ceará, Brazil

Rosa Maria Formiga Johnsson
and Karin Erika Kemper
(June 2005)

The authors describe and analyze water resources reform and decentralization of river basin management in the state of Ceará, Northeast Brazil, the poorest part of the country. The Jaguaribe river basin is located entirely within the state of Ceará. With a drainage area of 72,560 square kilometers, it covers almost half of the state's territory. The basin has 80 municipalities and more than 2 million people, about half rural and half urban, in primarily small towns, representing about a third of Ceará's population. Precipitation in the basin is highly variable, ranging from 400 mm in the hinterland to 1,200 mm along the coast. Rivers in the basin are ephemeral and only flow during the rainy season. The key water management challenge is to capture the water in reservoirs in rainy years and to manage it such that it will last for several years, in case the following years are drought years. The other important challenge is the increasing dependence of the state capital Fortaleza, located in a different basin, on water from the Jaguaribe basin. Decentralization of decisionmaking has taken place at two levels. Devolution from the federal to the state level in the past 15 years was highly successful. The state has created its own Water Resources Management Company (COGERH) which is responsible for water resources management throughout the state.

Decentralization from state to local level has been more partial. Although COGERH has decentralized the allocation of strategic reservoir waters to local institutions, many traditional water management attributions continue under its and the state's purview, such as water permits, bulk water pricing, planning, operation and maintenance of hydraulic infrastructure, groundwater management, and control. The creation of sub-basin committees and user commissions has increased stakeholder participation of all types. Although so far stakeholder involvement has been limited largely to the negotiated allocation of water and to conflict resolution, these experiences represent a radical transformation in management practices, transforming water users from uninformed takers of water management decisions to informed and aware participants in the management process. That said, local stakeholders still have no say in some decisionmaking processes that affect them directly, such as bulk water pricing or inter-basin transfers to Greater Fortaleza, which continue solely under the control of state government agencies. The case of the Jaguaribe basin shows that (1) long-standing political support is of major importance in the development and implementation of water resources management reform, (2) that institutional arrangements for water resources management can successfully be adapted to local conditions to achieve positive outcomes, and (3) that even with initial conditions that seem to not favor change, decentralization can be achieved.

This paper—a product of the Agriculture and Rural Development Department—is part of a larger effort in the department to approach policy issues in an integrated way. The study was funded by the Bank's Research Support Budget under the research project "Integrated River Basin Management and the Principle of Managing Water Resources at the Lowest Appropriate Level: When and Why Does It (Not) Work in Practice?" Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Melissa Williams, room MC5-724, telephone 202-458-7297, fax 202-614-0034, email address mwilliams4@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The authors may be contacted at adinar@worldbank.org or kkemper@worldbank.org. (42 pages)

3650. Institutional and Policy Analysis of River Basin Management: The Alto-Tietê River Basin, São Paulo, Brazil

Rosa Maria Formiga Johnsson and Karin Erika Kemper
(June 2005)

Johnsson and Kemper describe and analyze river basin management in the most intensely urbanized and industrialized region of Brazil. The area covered by the Alto Tietê basin is almost coterminous with the Metropolitan Region of São Paulo. With a drainage area of 5,985 square kilometers (2.4 percent of the state's territory), the basin encompasses 35 of the 39 municipalities and 99.5 percent of the population of Greater São Paulo. Population growth and urban sprawl in Greater São Paulo have been rapid and uncontrolled in recent decades. In 2000, 17.8 million people lived in the basin and by 2010 the population is estimated to reach 20 million. This massive human occupation was accompanied by the large-scale construction of water infrastructure, including dams, pumping stations, canals, tunnels, and inter-basin transfers to and from neighboring basins. Today, the Alto-Tietê basin is served by a complex hydraulic and hydrological system. Despite this extensive water infrastructure, the water availability of the region is still very low (201 m^3/hab/an) and even lower than the semiarid regions of the Brazilian Northeast. The two key management issues to be addressed in the Alto Tietê basin are water quantity to supply a burgeoning population, and water quality which is deteriorating to a point where water availability for a range of uses is severely affected. Urban flood control and mitigation represents another major challenge in the basin.

Although important achievements have been made over the past 15 years, the decentralization process—characterized by the creation of the Alto-Tietê committee and its subcommittees and some financing from the State Water Resources Fund—has yet to reveal measurable physical results such as the improvement of water quality or the rationalization of water use. It is undeniable that the Alto-Tietê committee and its subcommittees have already played an important leadership role around several issues. An extraordinary mobilization around water issues, problems, and management has occurred, even though solving many water-related problems may be beyond the capacity of the committees or even of the water resources management system as a whole. Charging for water remains one of the key issues in making the Alto Tietê Committee more relevant and giving it more say in water investment and management decisions. As long as such decisions remain at the individual agency level (both state and municipal), decisionmaking will remain fragmented and it is unlikely that key policy instruments to curb water demand increases and pollution will be implemented.

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